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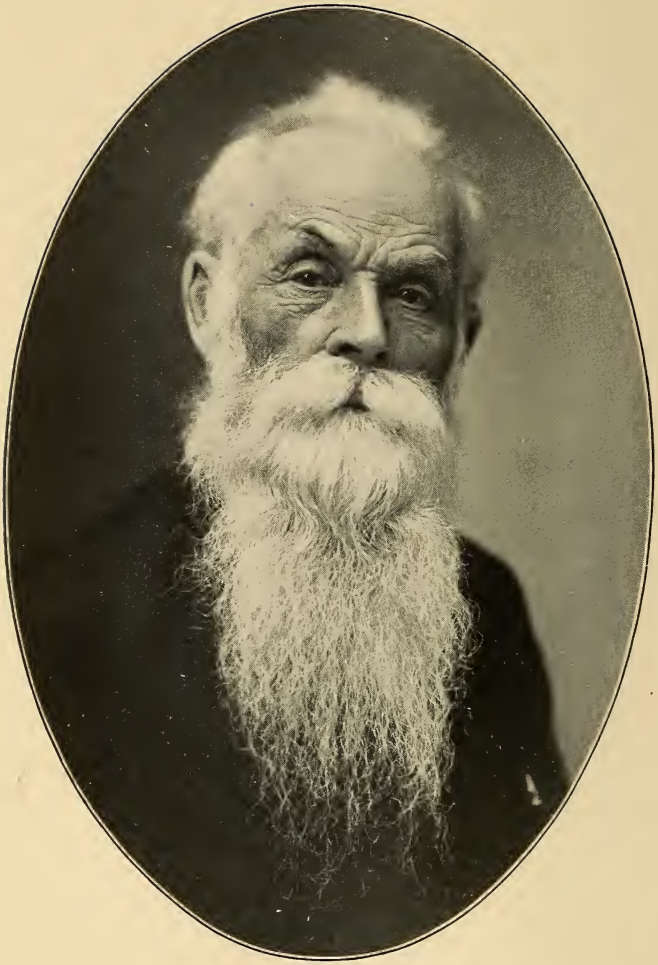

The Eternity of Matter

A Series of Discussions Affirming the Eternity of Matter as a Primal Postulate

By

Lockhart Brooks Farrar, LL. B., M. D.

1910

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"The secret of life will be discovered some time, how to initiate it, and how to continue it." Page 39.

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"On the scheme of necessary eternal matter with all possibilities and certainties involved in it, and to be evolved from it, and by it, rests our reasonable hope of an infinite continuance of life, rather than on a fictitious, theistic scheme of human imagination and construction."

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INTRODUCTORY SKETCH OF THE AUTHOR

By his Legal Counsellor and Friend,

C. E. Beach.

Dr. Farrar was born in Langdon, Cheshire County, New Hampshire, August 29, 1822. When about two and a half years of age, he, with his widowed mother, went to live in Walpole, New Hampshire, where he lived until he had sufficient schooling from the early New England Academies, to enable him to teach. He attended the Academies at Walpole, New Hampshire; Chester, Vermont; and Hancock, New Hampshire; and graduated from the Pittsfield, Massachusetts Medical College in 1848. He began the practice of medicine in Hollis, N. H.; then practiced in Manchester, Mass., and removed to Paxton, Illinois, in 1858. He received the degree of Bachelor of Laws from Ann Arbor, Michigan, in 1871, and was admitted to bar but did not follow this profession to any extent. He was thrice happily married, but neither wife nor child live to be his company in his latter years.

For many years the Doctor struggled with the profession of the Christian religion, and was prayerful in his search for the real ethics and truths of life. Thus it will be seen that "The Eternity of Matter" is not the result of early education and training, but of earnest study and personal research in his quest for the truth; and since he reached his fortieth year, the supreme, almost passionate desire to possess the simple faith, has been finally superseded and over-awed by the power of reason from the insistence into its processes of the absolute verities and axiomatics, despite his wishes to the contrary.

INTRODUCTORY

When this work was begun, the Doctor had no object in view, either immediate or remote. It was simply his written investigation of the questions weighing upon his mind. This will account to the critic for the possible lack of rigid connection in the various discussions. It is only in the later years that he has thought to give to the world his ideas, and these discussions are selected from a mass of the written thoughts and investigations of the author, not with a purpose to destroy fixed and satisfactory hopes and ideals of Christian devotees, nor with a purpose to vilify or derogate *the man* Jesus, (possibly one of the evolved functions of eternal matter) nor to detract any source of comfort derived from a devotee through faith in him; but that the scientists, investigators, chemists and thinkers of the world, may possibly find something in these discussions to stimulate their efforts to find the source of life,—to find the life principle, and resultantly to preserve it.

The uncertainty of the Christian religion and its basics, (which is the highest plane upon which the Doctor can place it), was first brought vividly to the Doctor's mind in the study of Sir William Hamilton's "Metaphysics and Logic," and from seeing in chemistry the exactitudes of everything in the natural and material world. From a series of studies thus begun, the Doctor reached the conclusion that the Eternity of Matter is the only actually posited truth.

In my acquaintance with the Doctor, I have found him to be as tender-hearted, and as easily convulsed with emotion in matters that pertain to the joy or suffering of human or animal life, as the veriest child. At 87 years of age, with a wonderful verve, and with a mind as clear as that of a seer at his prime, he spends his time in thoughts and deeds and works for the good of all humanity. His humanity is a very strong factor in his general make-up, and he is always careful to avoid causing suffering of either human or animal kind; and holds it a crime to de-

stroy life of any sort, needlessly. That it becomes necessary to destroy some forms of life to afford the sustenance of his own, is a source of regret to him. This may readily be seen by a perusal of Discussion 74 following. He is frugal in his *menage,* abstemious in habit, and pure in morals, though at all times most ready to spread the mantle of charity over the weak and erring. In fine, a pure and wholesome life presents to the world an analysis of the real philosophy of materialism, and its honest convictions in these discussions affirming "THE ETERNITY OF MATTER."

PREFACE.

The fundamental postulate must itself be self-evident, and not an inference from something else. The postulate is. Something must exist forever and without beginning to exist. We may also reach it as the conclusion of syllogistic reasoning from self-evident data, viz: Nothing can begin to exist without cause for beginning to exist. Not anything can be its own cause for beginning to exist. There is existence. Therefore there is existence that did not begin to exist. A corollary from this reasoning follows; eternal existence necessarily given leaves no ground for absolute creation, so none for a creator. Eternal and uncaused existence must forever persist in quantity as it now is and has forever existed. And all that becomes must be of it and by it as final source and cause.

The only thing we know, have sense or definite conception of, or has scientific or practical and verifiable recognition as undermost and quantitatively persistent through all changes, takes on all forms and is the one ground of all states, inanimate, animate and conscious, evolves all properties, qualities and functions, the substance that can be neither destroyed nor produced: the ground and reason of all that becomes, and the depository of what ceases its present form, properties and functions, the utmost element of analysis, is called matter. Nature or the universe is the sum total of all that is, ever has been, or ever will be, an affirmation that cannot be shown to be false, for it cannot be shown that the universe has limits, or that there is anything within it that is not of it. Certainly space and time which are essential parts of it,

cannot possibly be claimed as having limits or were created, or that they hold anything that is excluded from the universe of nature, or that they hold anything not dominated by their rules of order. Consequently there is no supernatural, and nothing chaotic or fortuitous. Matter that did not begin and cannot cease to exist is in fixed quantity, and it must have some mode of existing that neither began nor can cease. It must be either in motion or not in motion as mode of existing as universal and fixed in quantity as itself. Matter in motion or restraint of motion, which can only be partial and local, is force or energy, and not less so when restrained. Not until the middle of the Nineteenth Century was the fixed quantity of matter and force in the universe definitely determined. They are now propositions not disputed, under the appellations, indestructibility of matter and the conservation of force or energy. To nothing else do these qualities inhere or are they ascribed. They virtually determine matter to be the eternal existence which is the primal and necessary postulate. The indestructibility of matter legitimates the inference of the uncreateableness of matter. Of all realities then, matter is the most real, since it has forever been without beginning to be, and by consequence must forever continue to be. No such attributes can knowingly be claimed for thought, consciousness, self, ego or spirit. These phenomena appear, are local, individualized, numerical and, so far as we know, never were before. And after a while they disappear, and so far as it can be conclusively shown, never reappear. They are properties and functions of living matter. "Realities," says Prof. William James, "are things that exist independently of the feeling through which their cognition occurs. If the content of a feeling occur nowhere in the universe outside of the feeling itself, and perish with the feeling common usage refuses to call it a reality, and brands it as a subjective of the feeling's constitution." Mind, Vol. X, p. 29. For the cognition of a reality that is not an intro-

spection but is a real objective, the object must transcend the subject or self, otherwise it is a mere egoism or solipsism; i. e., the "belief or proposition that the person entertaining it alone exists, and all other persons and things exist only as ideas in his mind." This is the idealism of Bishop Berkeley, Kant, Fichte and Schelling. And, in some degree and form of its many aspects it is the prevailing philosophy of Christendom. Idealism is the doctrine that the real is of the nature of thought; that all reality is psychical. Berkeleyan idealism is that objects exist only in the mind, that God, the souls of men, and ideas in the souls, are the only real existences. This view relieves the Supreme Being from the impossible task of creating the universe of positive concrete matter out of nothing, and of giving being and intrinsic orders to space and time. Idealism is theistic in Kant also. Kant finds God, Freedom and Immortality *a priori* in the mind, which certainly is not biblical. That the thought-world and the material space and time world are one and the same real world is evident from this; when we place the critically studied thought-world side by side with the material space and time world, which is the subject-matter of all the positive verifiable sciences, they are found to coincide so far as we can go in thought. And we are well persuaded that the objective aspect of the world is infinitely extended beyond the reach of thought. We do not nor can we change the material space and time world to match our ideal world when there is a disagreement, but we feel that the truth of things has not been reached, and we study to bring our ideas up to the measure of what is their object-matter. "There is no mode of consciousness in which the opposition of subject and object does not appear." The indisputable facts that we correct our ideal world, by the test of the real objective world; that the objective world is infinitely more extended and varied than our thought-world; and that we have no ideal world but that derived from the objective world, are de-

cisive of which is the real eternal, perdurable world, and which the local, temporary and shadow-world. Kant says: "Besides the logical meaning of the I, we have no knowledge of it in itself, which forms the substratum and foundation of all our thoughts." The logical meaning of the I or self, is this: We are conscious of thinking and feeling, therefore there must be something that thinks and feels. This we call the I, or self, or subject, and know no more. We have no knowledge of what we call "I, myself," but this logical affirmation of it. It is not to be discovered by any observation or introspection. The logical need of a subject for the predicate "thinks," etc., "cannot teach us the everlasting continuance of the soul amid all changes, and even in death; therefore it only signifies a substance in idea, and not in reality." *Kant's Critique of Pure Reason, Max Muller's trans., Vol. II, p. 305.*

There never was a greater mistake made or more radical in psychology and scientific philosophy, than Kant's, when he denies that our knowledge must conform to the objects of it, and declares that objects must conform to our modes of cognition, which is to settle something about objects before they are given to us through the senses. Ibid, Vol. I, p. 370. If this be true, how can we be sure that we know anything about them *after* they are given? He held that there were, before any experience, forms set in the mind as constitutive of it,—the categories to which forms all objects, to be known must conform. Hutchison Stirling, Mind, Vols. IX and X, has made Kant's Categories look like a moth-eaten garment despoiled of its beauty and usefulness. The human subject or self is cognizable only as a logical subject, and not as an objective substantive entity, because it has no verifiable real sense-existence in itself, but only as the inferred property and function of living matter. To take the logical subject as a real substantive entity is a paralogism or sophism. That is, "it is false reasoning, the

conclusion does not follow from the premises, especially with reference to the substantiality, simplicity and personal identity of the soul." *Kant.* If the subject of a proposition is only logical, we have no ground to ascribe any definite character to it; it is merely formal. For instance: the presuppositions of space and time must be granted when any facts of existence or events are alleged. The properties of space and time are known, and their presupposition becomes necessary and self-evident. They are not merely logical. Life, sentience and intellection are functions of a complicated material aggregate or organism, to whose constituent parts neither these nor any one of them in any degree belongs. But they are locally evolved from this complex combination in a certain medium. There is a formative tendency universal in matter. Morphogeny, or the genesis of forms which means internal construction as well as external shape, holds within itself the secret of evolution in the inanimate and animate worlds. Nor is there a greater mystery. As matter never began to exist or to move as mode of existing, so it never began to evolve differences; like the presuppositions of space and time, presumptions that logically and of necessity must be granted before experience, even creation and creator, and concrete existence. In existence that never began to exist, there must be all the reasons for all that begins, the universal formative tendency serves to reveal one underived, sempiternal system and source. Singleness can achieve nothing. Combination of differences are factors in all effects. But *how forms* can father such a progeny of properties and functions, has not been seriously studied. *How* the union of the two invisible and intangible gases should take on the form of visible and tangible water with entirely new properties and functions and lose them utterly and return to gases and their properties and functions, on the dissolution of the union, is every whit as great a mystery and as seriously warrants the postulation of the separate en-

tity of aquosity to come into the oxide of hydrogen which itself has and exercises the functions and properties of water, as the much more complex make-up, the human organism warrants the postulate of an immaterial separable entity, a soul or spirit, which is itself sentient, conscious, and volitional. To find all things and ourselves in and of the material space and time universe from which we can neither escape nor transcend in thought, or experience, how muchsoever we may indulge in words assertive of it, is to follow the scientific consciousness and its methods of establishing the truth of things. There is only one self-interrelated whole of things, of infinite complexity, multiplicity and difference, without the opposing discontinuity of created and creator. We have no distinctive perception of the thing that thinks and feels, only the thinking and feeling. Therefore we cannot affirm the I, or soul, to be anything other than the sensitivity of living matter in all grades, from mere initial awareness which belongs as essential property to living matter and does not belong to not living matter; increases from bare awareness to discriminative consciousness of slight difference, on to intellectual inference and apodeictic clearness and certainty. It cannot be shown that all this discernment is not the function of living matter, as nothing else has been discovered that can feel and think, and we need have no expectation that anything else ever will be discovered. It is as evident that living matter feels and thinks as it is that which is operative in muscular action. Life and the greatest of human mental achievements discovers no entity but common matter. There is universal objectivity except locally, here and there, groups of molecules have taken on forms of life in one of the three or four great departments of animate nature. John Fiske has written: "The moment the first trace of conscious intelligence is introduced we have a set of phenomena which the materialist can in no wise account for." This challenge

need not be accepted. For John Fiske could not solve his own problem. But it may be replied that the question concerns the new scientific method of accounting for phenomena by evolution, in which Prof. Fiske was an advanced student, and has written "Outlines of Cosmic Philosophy, based on the Doctrine of Evolution." It might have been supposed that, if a philosophy of the Cosmos can be based on the doctrine of evolution, that the origin of sensitivity and consciousness might be based there too. The great principle that initiates the properties and functions throughout the fields of chemistry and much of physics, may be suggested by the materialist as equally efficient to introduce into the world of experience sensitivity and intelligence. We may posit awareness where matter initiates the formation of a cell, perhaps earlier, while protoplasm is chemically forming, on the sea bottom or elsewhere. Life invades material structure without waiting, when it is the property of its interrelations and of the environment. The chemical structure of protoplasm on which all life's processes in the four great divisions of animate nature, its consciousness and its volitional achievements depend, is very complex. Substantially one chemical union of atomic differences suffices to be dowered with aptitude to all grades of life manifest on the earth. "Both the cytoplasm and the karyoplasm of a microscopic cell, are not simple chemical compounds, but mixtures of many complex substances. It has been shown in the foregoing chapter that all parts of the cell arise as local differentiations of a general protoplasmic basis." *The Cell in Development and Inheritance, p. 330.*

Ourselves and all living things are a congeries of cells. They propose and solve our problems for us, get us into prison and out again, devise our philosophy and our religion, present to our vision the physical world, to our intellectual contemplation the ideal world and persuade us to the goodness of the moral world. Kant

had no notion of the multiplicity of pieces into which we are individually divisible. He says: "The soul, or the thinking I, is not the concurrence of several acting things. It is impossible that a thought should be inherent in something composite. Thought therefore is possible only in a substance which is not an aggregate of many parts of the absolute simple." Kant's dictum that the unmixed unity of substance in which thought inheres and manifests itself, is as completely outgrown by extension of knowledge, as the old Hebrew method of battering down the walls of a city, (Jericho) has been outgrown by increase of knowledge. We are built up of innumerable pieces of living matter agreeing to associate together to make feeling and thinking and deed-effective man. Feeling and thinking are the property and function of the most complex material structure known. Of all processes and products, to feel and think are of the highest order. It is an amazing truth that all grades of life involve but one common principle, and that expressed in its lowest conceivable terms in some degree of awareness as the universal essence of all living things. And substantially there is but one chemical union of atomic differences as its common seat and source of manifestation. And research has established one external form for all terrestrial life. And we have now more than ever reason to believe that all cells may be brought into definite relation to a common morphological and physiological type. A cell is defined as a mass of protoplasm containing a nucleus, and both nucleus and protoplasm arise through division of the corresponding elements of a pre-existing cell. Living protoplasm has the power of self-action. Functionally the nucleus is the most important part of the cell, though it may not be more than a 100,000th part of the cell, and that microscopic. The nucleus carries on the inheritable traits of form and character. There are chemically contrasted substances that make up the nucleus and the

body of the cell. They are called respectively, karyoplasm and cytoplasm; the former is rich in phosphorous. "Inheritance must be looked upon as merely a form of growth." *Darwin.* "It is certain that the germ is not a body in which life is dormant or potential, but that it is simply a detached portion of the substance of a pre-existing living body." *Huxley.* As far as man can trace himself regressively, he finds that he is initiated into living being in the bodies of his immediate parents, metamorphosed into the human form and nature out of their common vegetative and animal food by gradual differentiation of parts and growth by intussusception. "Every discussion of inheritance and development must take as its point of departure the fact that the millions of tissue cells of the body of the plant or animal are all derived from the cleavage or segmentation of one fertilized egg or cell, first into two halves, then each of these into two, and so on." Fertilization is accomplished by the entrance into the egg of a single spermotozoon and no more. This gives to the germ-cell its embryogenic-building capacity, after the similitude of the parental pattern, including mental traits, by cleavage and growth through intussusceptive deposit of living matter which dying by interstitial decay from fatigue of living action, is removed by catabolic or dissimilative change, while other dead matter is being vitalized and assimilated by reverse or anabolic preparation to take its place and do its service. Not until 1841 was it determined that the spermatozoa were formed in the glands of the testes. And not until 1875, did Oscar Hertwig establish the all-important fact that the fertilization of the egg was accomplished by the entrance into it by one spermatozoon and no more. The ultimate problem of sex, fertilization, inheritance and development, are cell problems." *The Cell in Development and Inheritance, p. 9.*

So man tracing himself regressively, finds that he is initiated into living being in the bodies of his immedi-

ate parents; metamorphosed into the parental form and given parental foods which had not immediately before assumed the human form or the human mental traits, all assumed through the initiative capacity conferred upon the female cell by fertilization, resulting in gradual differentiation of parts into the typical parental species and growth by intussusception. "Every discussion of inheritance and development must take for departure a great quality-difference between the fertilized mother-cell and the non-fertilized mother-cell. The former, under proper conditions, immediately begins to divide into two halves, end each of these halves into two more, and so on. That it can in a few days or weeks give rise to a mollusk or a man, is the greatest marvel of biological science. In attempting to analyze the problems it involves, we must hold fast to the views on which Huxley insists, that the wonderful formative energy of the germ is not impressed upon it from without, but is inherent in the egg as a heritage of the parental life, of which it was originally a part."

Perhaps a cell has been as much studied by means of the microscope as any other small thing; and possibly it has as much hidden away in it as any other little object. At least, it is the first trace of any individual obtainable. But to critically examine nature's work thus at the beginning, to see her method of procedure is certainly to spoil her work. Many different parts make up the cell. Cells have sex distinction. Not in form, but in property and function. Cells are of two classes: Somatic, that make up the general bulk of the body, and the germ-cells. The germ from which every living being arises is derived from the division of a parent cell of the preceding generation. In sexual propagation, each parent contributes one cell of its body to the formation and endowment of its offspring. These two cells coalesce and become one physiologically and embryologically. There is no architect that shapes the cell but the matter of the

cell itself and the environment. Nor does there need be. Matter that has the natural property of chemically uniting, does so of itself when near enough to feel the influence of attraction, if the different atomic elements that make up protoplasm, the one compound alone of matter by virtue of the combination, take on the properties of life in all grades of life and intelligence in its four earthly kingdoms of the living—the Protista, the Vegetative, the Animal and the Human. There is only one living combination or substance known—protoplasm, only one living form known—the cell; it seems quite amazing as long as man has witnessed living matter itself taking form and growing by interstitial deposit of new living matter and interstitial decay and removal of dead matter. In all these historic milleniums, man has never observed an architect in shrub, animal or man different from the living shrub, animal or man, nor has he outgrown the fetichism of positing an architect to place the particles of matter in every growing vegetative, animal and human being. But matter is worthy of more confidence, because it is our dependence however much we may depreciate it. The foremost people of the world have been talking against it for 1900 years. But there is nothing deeper, more persistent in existence, nothing else exists or has existed but matter. Nothing else lives, or can live so far as we know. It is all that is objectively or subjectively beautiful. Behold the flower. It has the properties of ministering to us love, and intelligence. It is our father, mother, child, wife, husband, friend. It is ourself. It serves our uses and our pleasures. It is our wealth and our means. We are because matter is. We live because matter lives. Let any one seriously consider all these points, and ask himself if he knows that he is as dependent on any one of the Gods, or on all the Gods, as he knows himself dependent on matter? Let him pass honestly in review the question of what he certainly knows about any God and of what means he has

of their acquaintance, and of what means he has of knowing about the matter. Let him trace himself from his conception to his death, and these two points well mark off the entrance upon and termination of his earthly career, and say if he has certainly learned about matter. Living matter is evidently its own architect. It builds itself into form. Matter is a much greater potency than most people give it credit for. A philosophy or a religion that makes thought or idea or a mental picture, a persistent real, and matter its shadow or derivative from it or a created product, is taking much from the efficiency of matter and bestowing it upon a name, and raises faith to the rank of creative cause. Faith can ground nothing well, that is not well grounded without it. Ever so much belief in what is false can never make it true, nor turn a bare idea into a concrete real. And Paul's definition of faith as it stands in the eleventh chapter of Hebrews, gives it this meaning: "Faith is the substance of things hoped for, the evidence of things not seen." And Jesus is reported as having given several illustrative examples of the same meaning. Here is one: "What things so ever ye desire when ye pray, believe ye receive them and ye shall have them" which justifies Berkeleyan and Kantian idealism. And if one can actually possess himself of a thing by believing hard enough that he has it when he has not, it ought to work Eddyism in reverse order, by dispossessing one of what one actually has, by disbelieving one has it. Such notions eliminate all regulative principle from the domain of nature and deliver the mind over to Gods and confusion. But how remote is this from the scientific consciousness and universal experience.

Jesus, and Paul, and Mrs. Eddy, have evidently not enunciated the principles which underlay the operative facts of the world. The 1000 acre corn fields out west are not produced by prayer, but have to be patiently and laboriously planted and cultivated, or a crop is not real-

ized. If Mrs. Eddy has perceptibly increased human longevity by her persuasion of people that they are neither sick nor in pain, then if they don't die, what an advantage she must be to insurance companies. The book that she so much reveres, says: It is appointed unto man once to die. And it can hardly be denied that the ordinary way of death is by a longer or shorter period of sickness.

CONTENTS

Discussion 1—Pages 1 to 2

Existence did not begin, nor can cease, but is eternal—Includes all substance—Space and Time are self-evident verities, independent of the intelligence that affirms their eternal necessity of being.

Discussion 2—Pages 2 to 3

Beginning not a postulate—Eternal existence—Intelligence nature's deliverance of itself to itself—Energy of a system (Maxwell).

Discussion 3—Pages 3 to 5

Mechanics extend throughout—Kantian theory as to space and time denied—Material universe a dynamic, mathematical system, therefore intelligible—Organic and inorganic chemistry are inseparably united (Haeckel).

Discussion 4—Pages 5 to 6

Nature must furnish the consciousness of itself, hence empirics and axiomatics from given data—Space and time not merely psychological—Kantian idealism would be to phantomize all sense objects.

Discussion 5—Pages 6 to 7

All energies or forces are motions of matter and in their numerous forms are but varieties, of the eternal mode of existing and functioning of matter.

Discussion 6—Pages 7 to 9

Corpuscles discussed relatively.

Discussion 7—Pages 9 to 11

Corpuscles probably the naked material whose infinite numbers are the eternal quantitative matter of the universe—Basic undermost all alike—Whatever becomes is involved in its nature—Light waves.

Discussion 8—Pages 11 to 13

The moneron—the man—Life—reason (Clifford) Organic disintegrates into inorganic from which chemistry had raised it—no supernatural—Matter the solution of the riddle.

Discussion 9—Pages 13 to 15

Organic and inorganic chemistry differ in complexity and environment—Life—Awareness—Protoplasm—The amoeba.

Discussion 10—Pages 15 to 19

Mind the product of physics and chemistry, which are the results of the mechanics of one matter in definite positional relations and motions—Life is a state of matter, and the living body a mechanical laboratory wherein the living structure prepares its successors—Hylozoism denied, Haeckel wrong—Supernatural unintelligibility—All things are natural.

Discussion 11—Pages 19 to 21

Creation and transcendentalism denied—Mechanics of matter causal of all becomings and ceasings—Man the most materially complex, the highest and most variedly phenomenal of all known objects.

Discussion 12—Pages 21 to 26

Our physics determine our ethics, our psychics, our theism, and our place in nature—Kant, Descartes and thinking truth discussed.

Discussion 13—Pages 26 to 31

The universe is systematic relationship of differences—The primal postulate—The mystery of the two gases—The exalted life taken to satisfy the life of micro-organisms of deadly diseases, a charge against the character of the creator—Man must help himself—Life a functional property of eternal uncaused existence, and creation proved unreal.

Discussion 14—Pages 31 to 38

Sir William Crookes and G. H. Lewes quoted—Life is living matter; a state and chemical mechanico structure of metabolic moving parts—Polytheism as true as monotheism—Religious dogma discussed—Quotations from discussions of biblical writers and advocates.

Discussion 15—Pages 38 to 42

Our hope is from the fact of the eternal permanency of matter, i. e., an existence, for a personality, an eternal personal entity after death, not through divine grace or a creation from nothing—Suggestion of higher development of vitalized matter by its relations for indefinite continuance and progress—**The secret of life will be discovered some time, how to initiate it and how to continue it**—Man cannot be praised for progress in knowledge of nature; he has allowed the wild to lead him, always expecting somebody coming out of the bushes to tell him something—Gods and

their messages discussed and the fictions of the scriptures—Notions of the devotee sacred, whether fetichistic, polytheistic or monotheistic.

Discussion 16—Pages 42 to 43

Discussions of religious writers upon science and evolution—The affirmer that matter is uncaused and uncreated and eternal is not necessarily a derelict socially or morally.

Discussion 17—Pages 43 to 47

Fetichism the first step in all religions—The Ante-Nicene Fathers—Religion defined—Cicero on religion and superstition quoted—More biblical writers quoted, and the encyclopaedias quoted upon the selecting, authenticating and arranging, correcting and establishing of the Bible.

Discussion 18—Pages 47 to 50

Hebrew text in shorthand—Its vocalization necessary for understanding—The Jews—The blunders of the transcribers.

Discussion 19—Pages 50 to 57

The philosophic view of religions—Clerk Maxwell discussed—We are tethered to the identity of our ancestors—Volition versus spontaneity.

Discussion 20—Pages 57 to 62

Choice is a complex, so is mind, so is man—Mind is the localized consciousness and offspring of universal intelligibility—Creation again proved untenable.

Discussion 21—Pages 62 to 71

Kant, intuition and a **priori** discussed—Gates and the dogs—Chemical combination and consciousness relational, Isomerism and allotropism support the proposition.

Discussion 22—Pages 71 to 79

Chemical affinities—The resultant property of their union—**Deus in machina** discussed—The philosophy of the Christian religion not the philosophy of nature—The existence of a God creator is not imposed upon reason as an **a priori** truth, nor of possible truth—Gods have always been an assumption among men—Theologico religious dogma and thaumaturgy—Criticism of the universal father's acts for his own glory.

Discussion 23—Pages 79 to 87

More criticisms and the sole evidence of the **ipse dixit**—Comparison of the gods—Gunkel's Legends of Genesis—Discussion of traditions of the story of the gods—Comparison of Hesiod and Moses—Theology and religion are neither science nor philosophy, nor do they found in objective fact

or reason—They are but continued story-telling based upon the fictions of the ancients—The Christian religion the progeny of polytheism and monotheism.

Discussion 24—Pages 87 to 92

A discussion of faith and relic cure—Discussion of the miracles of Jesus and his purposed miraculous kingdom on earth—Parenthetical question as to things ascribed to the sayings of Jesus, p. 88—The folly of TeDeums on the triumph of battle or thanksgiving to God on worldly success —Mention of the chosen people.

Discussion 25—Pages 92 to 95

The dark ages all Christian, no science—The kingdom of heaven absolutely monarchial, not democratic—Discussion of the Old and New Testaments, the God and the Trinity.

Discussion 26—Pages 95 to 98

No text books of the physics of the heavens declare the intelligible order of the stellar world as we know it—A discussion of axiomatic truths—The fiction of a supernatural explains nothing—The inevitable mathematics of Space and Time bring into systematic order the whole universe.

Discussion 27—Pages 98 to 102

The foreign spiritual—**Eternal nature as the sum total of all that is, may hold reasonable grounds for belief in a future life,** that cannot be reasonably believed to be furnished by the word-constructed and word-endowed God outside of nature—All differences evolve from the mechanics of one matter, in the infinitude of its numbers, their combinations, forms and motions—Evolution—Intelligence—Space and Time determine the order of all changing existence.

Discussion 28—Pages 102 to 106

Mistake of philosophy the postulate of one definite intelligence—Creation endowment of matter with motions, and previous design can never yield a philosophy—Philosophy must found on axiomatics—The inevitable primal assumption not free choice, nor creation, nor creator of existence, but existence uncreated and eternal—Uncaused and eternal the necessary and primal postulate.

Discussion 29—Pages 106 to 109

No tenable ground for hypothesis of a creator—Creator and creation versus eternal existence—Evolution versus creation—Faraday's fourth state of matter.

Discussion 30—Pages 109 to 119

Discussion of corpuscles and their associate electrons—Infinite differences come from infinitesimal masses of mat-

ter in innumerable numbers in complex mechanics of positions and motions—The vis viva of all difference whatever—Matter persists in one abiding quantity—Tyndall's rhetorical apostrophe criticized—Hylozoism denied—No order an impossible conception—Intelligence—Cudworth on Truth—Criticism of Kant's dictum relative to space.

Discussion 31—Pages 119 to 125

Space is the where of all existence whatever—Berkeley and Kant's position relative to space analyzed—Transcendental apperception—Chaos denied—Deist versus Materialist—Energy or force is matter in motion and quantified to the sum of matter.

Discussion 32—Pages 125 to 132

Organo-genetic chemical elements of life—Life an exquisite architect and builder, as a tenant builds its own tenement,—tenant and tenement identified, one, yet two—Evolution manifest—The protista—The mechanics of matter—Chemical combinations, affinities and environments—Evolution extends to inorganic as well as to organic matter, and founds on the postulate that matter is eternal and existence uncaused.

Discussion 33—Pages 132 to 139

Life, matter and motions considered relatively—Eternal existence the necessary postulate as opposed to the postulate in a transcendental.

Discussion 34—Pages 139 to 143

Lord Kelvin—the noble Lord must be religious—Analysis of God and Creation—Emotion a natural religion.

Discussion 35—Pages 143 to 147

Every theology fictitious—Spinoza a pantheist,—in his day self-appreciating virtue held atheism a monstrous criminality—Pantheism, Akosmism and Atheism analyzed—The Materialist versus the Creationist—Apologetic juggling of the deist—No word in the Sanscrit, the language of the Aryan race, which signifies "to create,"; its source is the dogma of revelation by ignorance.

Discussion 36—Pages 147 to 151

The Creator self-created is self-contradiction and denies his eternity—Scientific intelligence cannot aver creation or creator—The primal necessary affirmation is eternal uncreated existence, and all else is implicit therein—Atheism discussed—The hearsay proof of a creator—Clerk Maxwell quoted and analyzed—The impossible feat of a creation, the where, the when, the how and by whom—Could axiomatic truths be changed by a creator?

Discussion 37—Pages 151 to 155

The self-contradiction of Christian theism—Clerk Maxwell quoted on historicity of matter, the unit of matter, the electron, the law of natural selection, cathode particles—Query: Is this the key to an explanation of chemical phenomena—The eternal ever-changing dance goes on.

Discussion 38—Pages 151 to 161

Tautology—The force of Clerk Maxwell's reasoning discussed—No antecedent cause in eternal existence—The general faith of theism—Prof. Helmholtz' "The Principle of the Conservation of Forces"—The early religious training of Faraday, Kelvin, Maxwell and others, clings tenaciously, so that their statements relative to creation and the eternal existence of matter, are destructive of each other; and they rest on the **ipse dixit** of no authority—The gods the starting point, the glory of bards and story-tellers—The Grecian myths and the Mythopeic age—**Physis** and cosmos originated with the Greek philosophers—Unchangeable cosmic substance suggested by Xenophanes, geometrical combinations of Pythagorus approaching the explanation of physical phenomena; they all agree in recognizing objective truth in nature.

Discussion 39—Pages 161 to 167

Author's conception of the Greek gods and religions—Tendency of men to seek a cause—Dreams and shadows—From barbaric experience to superstitions, religious notions, myths and dogmas, revelations and rituals—Theism is not the philosophy of thinkers.

Discussion 40—Pages 167 to 171

The theist's dogma and the atheist's primal postulate—Moral character humanistic—Atheism the afterthought of larger intelligence and more moral life—Atheism, Hebraistic Monotheism, Christian theism, Hellenism, Modernism and Mohammedanism compared—Anti-War and Anti-Criminal act—Buddhism noted.

Discussion 41—Pages 171 to 174

Why not eternal uncreated existence?

Discussion 42—Pages 174 to 178

Matter needs no force foreign to its nature and surroundings to put and keep it in motions—The theistic traditional empire of superstition, builded on visions, auditions, dreams and thaumaturgies—Idealism versus Materialism—The tracing of the pedigree of the ego and the lily—Awareness of positive existence—the very self.

Discussion 43—Pages 178 to 180

Vitalization—Awareness—The cosmos inevitable.

Discussion 44—Pages 180 to 183

Immaterial entity, spirit, ego as originator and master of matter, is but an aristocratic sentiment—Matter is the sole ground of psychic as well as non-psychic phenomena—Life, consciousness, and volitional acts are the evolved products by evolution through the mechanics of one substance in related positions and motions.

Discussion 45—Pages 183 to 189

The intelligible universe everywhere open to intelligence through the function of the most complex of all complexes, the human material organism—"God made it so" discussed—We think the thoughts of nature instead of thinking the thoughts of God—Nature evisaged in her own consciousness of herself—Creation discussed as a mythical tradition—Nativity of the soul?

Discussion 46—Pages 189 to 197

Ancient philosophy **"ex nihilo nihil fit"**—All theists and atheists alike repudiated the idea of creation—The inadequate evidence for creationism—Religionists do not found dogmas on scientific proofs, but override and set at naught the commonsense of enlightened men in the sweep of childish faith—The **a priori** of space and time—Infinitesimal calculus—Integral calculus—Space and time are primal facts discovered by nature's function of self-intelligence.

Discussion 47—Pages 197 to 202

Aristotle and Bacon on physics—Spinoza's definitions, propositions and demonstrations and the philosophy of Descartes deduced from a gratuitous and needless assumption of creation—Theologico-metaphysical speculation in untrammeled course from generalization to generalization always reaches Pantheism, God everywhere and in all things —An argument.

Discussion 48—Pages 202 to 207

Positional and motile interrelated order of corpuscles or electrons, atoms, molecules and masses—Consciousness and free will—When creator summoned, there came a swarm of creators, Gods and Goddesses that held the world in thrall for ages—The swaddle and the toga—"Imminent creation"—The Christian doctrine never proven true.

Discussion 49—Pages 207 to 220

The assertion of creation a dogma inherited from the past, with little or no thought given to the question of absolute origins or to creation itself—The averment is without

necessity for itself—The only ground for the averment of creation is that the creator made verbal declaration of it, or inspired its announcement—Its improbability, the impossibility of its proof, its unreasonableness and the fact of the changes the ancent writing is known to have undergone, the improbability of God inspiring men to speak or record the truth about himself, or having done it, would suffer it to be lost or become entangled and incorporated with that not inspired, make the averment puerile—Christ's miracles not noticed by the Romans—The old and new testaments discussed—Correction and establishment and selection of the scriptural texts—the Catholic Bible—The 120,000 enumerated errors, the 30,000 important ones—The vision to Constantine—The standard of the cross—The success of the Battle of Milvian Bridge—Constantine as the Christian head of the allied church and the world, falsifying the words of Jesus, "My kingdom is not of this world"—The Oecumenical council at Nicaea, 325 A. D., to determine the relation between the Father and the Son—The argument of Arius, the presbyter—The Trinity—The sectional hostility of the Christian religion—The torture and death of Hypatia by the monks; painful but justifiable to save men's souls—Vide Calvin in burning Servetus—Christianity; Judaistic, Hellenistic and its tritheism an inheritance from Polytheism—A quotation from the lecture of Loisy, the recusant Catholic priest—Religions that found on claim of a divine revelation and antagonize one another, mutually defeat the claim of each other—The presto change of something from nothing by fiat—Discussion of the plagues of Egypt—The miracles of Moses—No record by the Egyptians of the Hebrew sojourn—Why not the eternal, uncreated substantive universe?—Mathematical order from physics to psychics, from corpuscles to Sirius and Canopus—Proctor's "Other Worlds than Ours" quoted from and discussed.

Discussion 50—Pages 220 to 228

Space itself is a prime factor in the evolution of life and intelligence—Astronomy and Chemistry—The matter of our bodies as ancient as the sun, our minds only of yesterday—Creation, its inveterate allegation from custom and habit—Hebrew creation still taught—Sir William Hamilton, Metaphysics, quoted and discussed—The absurdity of the Metamorphosis of the Deity into materiality, its then division into suns and planets, asteroids, comets, meteors, Great Canopus and the dust, and a further development into the Upas, Apple and Orange Tree, the Cobra-de-Capella, the Lion and the Lamb, Torquemada and Jesus—J. D. Morrell on Imminence, a quotation and discussion—Unintelligent but intelligible laws of material procedure, not in harmony with Diogenes Laertius' quotation of Anaxagorus—Nothing for evidence of Creation but the **ipse dixit** impossible.

Discussion 51—Pages 228 to 235

Parsons on "Belief and Credibility" quoted at length and discussed—Quotation from Mill's Logic and its test applied—The credibility of evidence analyzed.

Discussion 52—Pages 235 to 242

There are grounds for a religion of nature as supreme, but in this there is no theos or theology—Theology rests on no better grounds than the Theogeny of Hesiod—The atavism in Christian theology—The feeling of dependence in the norm of human nature—Theistic and religious faith, a subjective state, and for its most potent affects rests upon a mental picture of faith's own drawing—No evidence that mind or spirit is a self-existent or created entity, existing independently of matter—**The possibility of a future life on the ground of self-existent and eternal matter**—The warp and woof of life in the dust and its moving mechanics—Matter suspended in space—Nature's differences keep nature's peace—The functioning of the continuance of the identity of ourselves—Life finds its source and seat and capacity in material relations.

Discussion 53—Pages 242 to 251

By a progressive evidence that nature is complete, spiritualistic thaumaturgy or theistic causation has been gradually dropped out from text books on science—Theism lingers as a relic of developed barbaric animism—The deductive reasoning is the mathematical, whose principles are axiomatic—Descartes' "I think, therefore I am" discussed in connection with coenethesis—The brilliant and famous intellect of Rene Descartes might never have been, and geometrical magnitude by algebraic equations have been unknown—The germination, growth and development of all life discussed—Descartes' Philosophy criticised—The thing that thinks—The juxtaposition of the parts of matter result in the phenomena of life. (Mill's Logic)—Descartes' conclusions further criticized—The objective entity—The idea of making that clings to the race was probably the origin of the suggestion of being greater than human, and of how sought causes became Gods—God in the garden, and Zeus on Olympus.

Discussion 54—Pages 251 to 256

Mind or consciousness is of the physical processes—Query: Does matter as matter think and feel? No other origin for psychics than physics—The difference in antecedents from consequents lies in difference of mechanical arrangement of matter—Query of the two gases uniting chemically forming water—From the organic to the inorganic and the inorganic to the organic are but shifting mechanical forms and their consequent properties and func-

tions, and the how or why answered "God does it" offers no explanation—The germ cells may compass the heritage of the species—Anthropological dissertation—The subjective and objective.

Discussion 55—Pages 256 to 265

The objective being a property of life with its riches of intelligence, is created within the organism and is the function of material processes—Chemical affinities and their opposites—Deadly poisons but chemical combinations of the same kinds of matter, which in their combinations are constituents of our bodies and our foods—Prof. Elmer Gates quoted, his experiments discussed, and his system of scientific mental culture and discipline pronounced decidedly materialistic by the author, though Gates does not label his conclusions—All response in the whole of inanimate nature is mechanical to mechanics—All life known to man is an inherent property of indwelling awareness—Awareness discussed.

Discussion 56—Pages 265 to 272

The methods of creating life and intelligence the same as for creating chemical properties, but more complex—Alphabets and manuals—Orderly relations of intelligibility—Nature's differences all orderly—Nature's universal intelligibility not ordered by intelligence but intelligence the complement or counter-part of nature's intelligibilty—How nature expresses consciousness of herself—Awareness originates in the chemistry of protoplasm, and is no more traceable into the elements of protoplasm than is water traceable into hydrogen or oxygen as such, but only into their specific union called chemical—The albuminoid substance constituting the physical basis of life in plants and animals—The protoplasm builds up every vegetable and animal fabric, but itself devoid of histological structure-cell—The life of organism as a whole consists of the continuous waste and repair of the protoplasmic material of its cells—Indications that life began on our earth, not by a meteor dropped from another orb, nor created by God, but presumably evolved from chemical unions, for we cannot adopt the aphorism "life only from life"—Spontaneous generation discussed—The beginning of life discussed from various standpoints.

Discussion 57—Pages 272 to 278

The only true philosophy—Fiat creation unintelligible and a monstrous fiction—No superuniversal supernatural or metaphysical not caused by physical and mechanical—Kantian metaphysical dogmas criticised—"The Principles of Human Knowledge" by George Berkeley discussed and geological eras, periods and data referred to—The consecrating prayer does not transsubstantiate.

Discussion 58—Pages 278 to 285

Bishop Berkeley of Cloyne presented his idealism as a scheme of religious dogma, and as a silencing argument against atheism—Quotations from his "Human Knowledge" and from his "Three Dialogues between Hylas and Philonous" argumentatively criticised—An argument: Substance versus Spirit.

Discussion 59—Pages 285 to 296

A continuation of the argument against Berkeley, Descartes and Kant, analyzing the subjective, objective thought-world, real-world and the scholastic realism of Plato—The evidences of positive existence brought forward —Theological superstition only modified by discarding multiplicity of Gods—The attempt of August Comte to interpret nature—His theology only human and physical—The suggestion of greater than himself his only pragmatic model —More attentive and profound consideration of the universe will disclose our cause, origin, destiny, ourselves, all our realizations, cause and effect, the false and the true, the good and the bad, in fact everything—Creation or the actual causal becoming of matter not thinkable.

Discussion 60—Pages 296 to 301

The God of the Hebrew Pentateuch, the towering anthropomorphism, the Hebrew tutelary God, an exclusively tribes' God, jealous, proselyting and only superior in the physical miraculous, outdoing the Egyptian Gods in a set contest, could drive out the inhabitants of the mountains, but could not drive out the inhabitants of the valley, because they had chariots of iron—Nimrod—Samson—David —Hercules—Hercules' twelve public services—Hebrew world not less ignorant at time of Jesus than when Old Testament was imposed upon the people for historical truth—The sum total of all we know—Maxwell quoted and discussed—Quantitative substance self-actuated, unbegun as time, and as time forever enduring, of infinite fulness of actualities and potentialities, that are ever actual—Space and time, inextinguishable, unvarying objective verities, subjective, determining, measuring validities.

Discussion 61—Pages 301 to 309

Eternal existence from which the subject self, ego or the I, though not matter itself, is evolved, as treated in this discussion, a philosophy in itself—Radium and its wonders noted—Liquid air.

Discussion 62—Pages 309 to 312

The creation passages of the Bible quoted and discussed—Jesus discussed with the miracles attributed to him—

The prophetic announcement, virginal conception, Holy Ghost fathering, and a baby half God and half human, the basing of which on a dream and that the prophecy be fulfilled on the ex parte testimony, without cross examination; simile of a black child born of a black father and a white mother—The religion really generated by the desires and fears of a people of ignorance.

Discussion 63—Pages 312 to 317

Deals with the Christian apologetics, which is defined as the defense and vindication of Christianity.

Discussion 64—Pages 317 to 324

The scientific view of the universe does not warrant the deduction of its creation—The theism of Jews modified by Gentiles and called Christian, equaled and surpassed centuries before birth of Jesus, by the atheistic ethics of Gotama, showing the whole matter of gods, devils and religion to be subjective naturally, early human, inferential deposit and outgrowth of man's desire to know ultimate cause, thus teaching the origin of evil spirits, demons, devils, good spirits, angels, gods and one supreme God—The parallels of Christianity and atheistic Buddhism—Dissertation upon the histology of religions, witch-craft, sorcery, and why Plato never meddled in politics.

Discussion 65—Pages 324 to 333

Discussion of the 14th Century, the devil and the black death with no father God to make the reservation as was made for Job—The erudition of Balaam's Ass—The fading of the narrow spirit of patriotism into wide cosmopolitan philanthropy only strictly limited by the creed—Discussion of Arian dictum, scourging of the widow's feet, the flogging of the virgins—The riot and bloodshed caused by the followers of St. Cyril of Alexandria—Quotation from the Lord: "I make peace and create evil; I, the Lord, do all these things"—The reformation and the witchcraft, superstition—St. Dominic in the Inquisition.

Discussion 66—Pages 333 to 336

The question of demoniac possession or obsession not soon to be determined by universal agreement—Jesus saith "If my kingdom were of this world, then would my servants fight"—Doubts as to the real character of Jesus and the real truth of what he said and did—Other quotations from the old and new testaments, and a comparison of the Roman and Grecian Gods with the Christian Gods, and the Virgin Mary.

Discussion 67—Pages 336 to 342

The time and extent no evidence of the truth of the

underlying theology—Theism wholly subjective, admitting of no objective verification—Enthusiasm but a misconceit of being inspired—Derivation of the word "inspired" and a discussion covering Luther, Calvin, John Alexander Dowe, the Mohammedan Dervishes and the monastics, zealots, Simon, and the hallucination of St. Anthony—Further discussion, analysis and argument upon the question of religion.

Discussion 68—Pages 342 to 348

Celibacy and the exaltation of virginity, the degradation of maternity and paternity—Tenets of the Church being opposed to the injunction "Be fruitful, multiply and replenish the earth"—The Apocalypse estimate of male virginity—The defilement by women—No marriages in heaven —Male Godheads—Man in the image of God—The realizing certainty of a sinning posterity, Adam sexed or unsexed, incompetent to the dire results—Dissertation upon man, woman and child bearing—The sex literature of the Bible —The nature of man—Mating in all bisexed animals—Conclusion, not of religious but of nature's adequate mechanics for a perfect, effective function—The perfection of natural construction, the eye.

Discussion 69—Pages 348 to 355

Parasite the cause, man the host of **trichina spiralis**—Man naturally has no pre-eminence over **trichinae**—The basis of Christian theology not a **priori**, only historically assertive—The God of the Hebrews visible and audible, and challenge to his existence an appeal to individual and rational sensible experience—The evidence of "justification by faith alone"—The ass spoke to Balaam and the Lord spoke to the fish, and Jonah, the vomit that went down to Ninevah—The horror of unbelieving—The popular standing of Christianity rests upon the proof of natural impossibilities, the creation of matter, the infinite extension, omniscience of a personality and the human birth of a God, all impossible of proof—The condemnation of Socrates—A treatise of the Japanese to show that all moral virtues did not originate from Jesus of Nazareth or the Hebrews—Reference to God, theism and the imperfect effects of it.

Discussion 70—Pages 355 to 358

All properties, qualities, capacities and differences, originate in physical difference of positional interrelations and numbers of one substantive matter and its motions, delineated.

Discussion 71—Pages 358 to 365

Life a possibility of matter, and matter becomes living by special interrelations of positions and motions with it-

self, under a definite environment, delineated—Sensitivity an intrinsic essential and universal recognition of matter with itself—Cell life—Germ Cells—Volition—Human blundering—Recognition inherent in material relationality—The question of the creation and the universe.

Discussion 72—Pages 365 to 371

The question critically analyzed; a beginning, hence a creation denied, and a general survey of these questions.

Discussion 73—Pages 371 to 375

This thinking thing; an anthropological dissertation, ending in a criticism of inhumanity.

Discussion 74—Pages 375 to 380

Man the only beast of prey that prays—Evidence that other animals love life as we do—Civilized man has no pity or fellow feeling for the animal bred and killed to fatten his bank account, and only the **"Heathen atheistic Buddhist"** who neither breeds nor kills nor eats his more distant kin, has awakened to the savagery of it—The cries of agony and sight of wounds moves not the butcher (who prays in articulate sounds) to relent as human prayer does not move a defender in the skies—Human slavery—The divine right that human might makes—When man the stronger, divine right is with man; when the animal is stronger, and the killer and the eater, the divine right is with the animal—The skies silent in the one case as in the other—Argument against the assumption of a fatherly creator—Theism is wholly subjective, emotional and assertive, and as impossible of objective verification as the gods of ancient Greece and Rome—Miracle has ceased and there is now nothing but home-made evidence of Gods—The attitude of the orthodox **Fatherly good Creator** analyzed and criticized—Quotation of Fairbairn that is the experience of multitudes, page 379.

Discussion 75—Pages 380 to 389

Resume of the philosophy of the eternity of matter—The all commanding and victorious feature of materialism—Natural phenomena—Spirits and their communications through a material medium—If they are, they are somewhere in the summerland—Telepathy—Transmission of light and heat—The **medium for vibratory motions**—Electrical and magnetic phenomena—The property and functions of the ether—**Ground of hope more secure on necessary averment of eternal uncreated existence that human personality may be continued after seeming extinction in death, than from the almost universal desire for it or a fictitious theistic scheme of human imagination and construc-**

tion—THE REASONS FOR IT, page 387—Property of life —The store-house of eternal universal ongoing, self-evolving nature, may hold the power to so continue it and all it stands for in its conscious development—The necessary posit and affirmation—Scientific dictum is that all life is wholly the evolved property and function of matter.

The Eternity of Matter

A Series of Discussions Affirming This Proposition.

Discussion 1. Nothing can begin to exist without cause for beginning to exist. Nothing can be its own cause for beginning to exist. Something does exist. Therefore something exists that did not begin to exist. What exists without beginning to exist cannot cease to exist. By existence is meant the contradiction of non-existence, something as opposed to nothing. Eternal existence cannot change in quantity. But it is that which is involved in all actual and possible changes, becomings and ceasings; all phenomena and events; all that presupposes space and time as conditions. This totality is the universe, nature or cosmos. That of the universe which changes in form, property and function, but not in quantity, is substance or matter. And it must have some mode of existing as fixed in quantity as itself. This is motion, otherwise called force or energy. This double aspect is known in physics as the conservation of matter and the correlation of forces, and are called by Haeckel the law of substance. All the affections and forces of matter appear to be modes of construction and of motion. And of necessity substance must be in motion or not in motion. Space and time being necessary presup-

positions and orders of existing and changing cannot be existence or change in any sense in which they must be presupposed in the existing of matter and its changes. The sum total of all material substance, its phenomenal becomings with their conditions, space and time, is the universe.

This universal all, the uncaused and caused, the persistent and the transient, contains all living and not living, and is forever evolving orderly forms and functions, and dissolving into other orderly forms and functions, by virtue in existing in motions and in the inevitable orders of space and time. Descartes held that as it is the nature of matter to be extended in three directions, so it is the essence of extent to be occupied. But whether space is a plenum or not, it cannot be identified with its content. There is evident impropriety in calling absolute vacuity substance or phenomenal existence. Space and time cannot change. They are presupposed in all that exists or changes. They are not objects of the senses, but necessary affirmations of intelligence, deduced from sense percepts and declared to be eternal, universal, necessary and self-evident verities, independent of any content, and also of the intelligence that affirms their eternal necessity of being. Some one has said: "Matter and force are mere abstractions and mental symbols. To look upon them as realities is a self-mystification." From what are matter and force abstracted, and from what reality more real are they symbols?

Discussion 2. We must affirm that something exists without beginning to exist. And it must be known to reason and experience, or it could not be so affirmed. And nothing is known to have this property if matter has not. We cannot postulate existence upon a primal beginnning to exist, but upon a necessary eternal existing. And what is the validity, the evidencing value of verifiable scientific intelligence; of axiomatic propositions; of averments we feel must be true of necessity

everywhere, always have been and forever must be, undetermined by our volition or any other whatsoever, to have them so; of the certainty we feel in the objective as well as subjective truth of the mathematical and logical processes and conclusions? My conviction is that they are the verities of reason and experience, because they are inwrought in the universality of the material space and time universe. Intelligence is nature's deliverance of itself to itself. And is the property of consciousness in the most complex human organisms by virtue of the complexity of matter in positional relations and motions. And in the less complex animal organisms the property of these relations avails to adapt the internal to external without the clear consciousness of it. This is usually called instinct. Eternal existence and its becomings must involve its own philosophy. Nor can it have a foreign interpretation because there is nothing foreign and no foreigner. In the necessary affirmation of eternal or uncaused existence lies the implication of the denial of absolute creation. Since what we must affirm to exist without beginning, we must deny to have been created. It is self-evident that whatever exists has some mode of existing. And some eternal existence is quantitatively unchangeable, its mode of existing must be constant in quantity. It is the deliverance of science both experimental and theoretical, the quantum of both matter and energy in the universe is fixed. "The total energy of any material system is a quantity which can neither be increased nor diminished by any action between the parts of the system, though it may be transformed into any of the forms of which energy is susceptible. A material system may be a single material particle, or a body of finite size, or any number of such bodies, or it may be extended so as to include the whole universe." MAXWELL'S MATTER AND MOTION.

Discussion 3. Mechanics extend throughout the universe. We have said that existence and change presup-

pose the verities of space and time. But their contents can dictate nothing to these verities. They of necessity impose their orders upon their contents. The mathematics express these orders, laws, or interrelations, to which matter its motions, their forms, properties and functions must conform. And as changes of material forms and their properties are always and everywhere going on through motions, motion force or energy, must be the universal and necessary mode of material existing. The mathematics have an unerring, intelligible and universal validity, because they express space and time relations of material changes and functions, and of its supreme function mind, and would be true in their eternal principles were there neither matter, energy nor mind. The universe is mathematical, therefore intelligible.

Kant held that space and time are psychological only, pure intuitions. But intuitions of what? They must have content. And it is held that intuitions are of two orders and sources. Contingent objects of sense, and objects of the reason, or the recognitions of truths that are necessary and universal. Space and time are of the latter class. They are psychological and valid in the subject, because they are first valid in objective universe. Mind does not create these truths; it simply perceives the abstract relations to be universal. They are eternal and necessary conditions alike of self and not self. The internal self is but the recognition of one eternal entity with infinite difference of functional becomings. It is one of those fundamental truths that nature has brought to consciousness in the advanced psychology of the human being, that she is everywhere and in all things intelligible, because she is universally interrelated in positions, events, actions, quantities, forms, functions, numbers, processes, properties, and qualities, in the world animate, inanimate and psychic. The relational is expressible in the exactness of methematical science. The material universe being energized by motions, is a dy-

namic mathematical system, and therefore intelligible. The absolutely unknowable is not a deliverance of nature in the consciousness of itself. She has no secrets which she cannot or will not reveal in consciousness. The subject or self is only the object or not-self come to local consciousness. This seems to me nearly self-evident. Because I cannot recognize a self except as evolved from the not-self. Life is the natural property of a highly complex local chemistry of matter under certain conditions of the environment. For wherever it appears it belongs to an identical or similar chemical combination, and involves a degree of sensitivity or awareness. This increases, differentiates and is advanced by contributory special organs from the protista and vegital kingdom and lower animal, and becomes intelligence in the brains of the higher animals and self-conscious, calculating and reasoning in the brain of man. "Life," says Haeckel, "may be conceived as a special process of movement. Recent study has shown that this is always conneetcd with a particular chemical substance, *plasm,* and consists essentially in a circulation of matter, or *metabolism.* At the same time modern science has shown that the sharp distinction formerly drawn between the organic and the inorganic cannot be sustained, but that the two kingdoms are profoundly and inseparably united."

Discussion 4. Nature must furnish the consciousness of itself. And shall we say it belies itself or is true to itself, in the consciousness it furnishes? Our minds (a word which generalized consciousness) must be formed, equipped and empowered, by that of which they partake, the necessary and universal, and the contingent and fleeting. Hence, sensuous and empirical facts, and axiomatic propositions, and reasoned conclusions from given data. The allegation that space and time have only a psychological, an ideal and not a real objective validity, carries with it the idealization of all things, and denies any other reality. "Idealism is the doctrine that

all reality is of the nature of thought. The universe of matter and change are only psychical.'' It is the very nature of Kantian idealism that objects are not there until they are thought: says Edward Caird, as quoted in Century Dictionary. Then if objects are not there until they are thought, and are there when and as thought, thought creates the objects. Then can there be any need of going abroad to see the world and make discoveries? And the architect has but to think out his materials wanted and lo! they are there as idealized. This reduces to phantom all sense objects. Astronomy, chemistry and physics, all the concrete sciences, all domesticity, and every thing that involves sense perception becomes phantomized. The abstract mathematics would perhaps remain, but they would have no practical external application. Indeed, externality, objectivity, is swallowed up in the abyss of the subject. Then our sensuous knowledge does not give to us the reality of things. Nature has belied itself in fashioning organs of sense by the very affections and properties of things which these affections and properties have created and endowed with capacity for their appreciation, as light has formed and dowered the eye, sound or tone the ear, and so with the rest of the sense organs.

Discussion 5. Energy or force in the last analysis and its ultimate conception is motion of matter. This of course, includes statics as well as dynamics. And as the quantity neither of matter nor of energy in the universe can be increased nor diminished, the sum of motion in the universe for a constant unit of time is a fixed quantity. Then the universe is one all embracing and inter-connected system, and all action is of and among its parts. Therefore the quantity of its substance and of its force cannot be more or less than they now are and ever have been. These two aspects of existence are not interchangable. Matter can never by its incessant motions and collisions be worn away and finally cease to exist. Nor can

the energy of matter which is its motions and mode of existing ever become exhausted and universal and absolute quiescence prevail. "Energy cannot exist except as a moving state of matter. It has no individual existence. It is the universal and necessary mode of existing of matter. It is evident that matter must be either in motion or not in motion. Scientific observation finds it to be everywhere in motion. And the theory of the universe founded on the law of gravitation and other verifiable data, warrants the conclusion that the motion of matter is its necessary and universal mode of existing. Matter being eternal and uncaused, its motion is involved in its self-existence. The universe of matter, space and time, holds within itself all laws of being and the complete reason of all changes, becomings and ceasings. Matter is in nebula—and world-masses, meteors, molecules, atoms, and corpuscles, according to the present status of science. Every one of these bodies of matter is in its individual as well as its grouped motion. "The earth is continually revolving on its axis and traveling round the sun. It also has a motion on its axis which is completed in about 19 years, and another which is accomplished in 25,868 years, and a fifth motion with the Solar system which may require millons of years for its completion." Besides these motions of the earth as one coherent mass, there are the individual motions of the smaller groups composing it, the molecules, atoms, and corpuscles, resulting in forces and properties and functions, as light, heat, electrical, magnetic, chemical, molecular, atomic, corpuscular, crystalline, organic, physic and others. All are but varieties of the eternal mode of existing and functioning of matter. Let us bear in mind that what is eternal has no originator. And what comes of it is possible and certainly intrinsic and involved of necessity, and includes life and all that appears volitional and contingent.

Discussion 6. Physics and chemistry have lately

made great discoveries in the nature and possibilities of matter, its forms, forces, functions, and properties. The wonderful detectives of nature's secrets carry implications far beyond their direct revelations, as spectrum analysis, radio-activity, the magnet, prism, electroscope, electrometer, spectroscope, radiometer, bolometer, Kinetoscope, telescope, microscope and many others. The atom until the past few years, has been held to be the least quantity in which any kind of matter existed separately and in itself and entered into chemical union with other atomic kinds of matter to form the 250,000 or more differences of material substances. So there would be just so many kinds of atoms as kinds of matter, now numbering in the latest compiled list that I have seen, 78. But it is now held by the leading physicists and chemists, that there is really but one ultimate kind of matter. And the atoms are all bodies compounded of this one universal matter. And all difference of form, property, quality and function depend upon the numbers, the relative positions as grouped together, and the motions of each individual part or corpuscle in the atom, and atoms as grouped in the molecule, and these as they make up the separate mass from other masses. According to this mechanico-mathematical conclusion, and if so it can be set aside only by its peer of certainty, all the different kinds of matter as gold, iron, copper, carbon, sulphur, arsenic, oxygen, etc., with all their difference of properties, uses, and functions, are made so by the different modes of construction and motion of the ultimate particles of one homogeneous matter. The least number of these corpuscles associated in any atom is the hydrogen atom, and this is approximately 1,000, and in the atom of uranium they are 238,000. It is a wonderful achievement of human intellect that it has determined magnitudes so near to zero. And still more amazing that nature accomplishes all her differences, even the conception of it, by the manipulation of infinite numbers of one homoge-

neous instrument in the unerring exactness of space and time infinitesimal relations. The detective electricity, being put upon the case to determine whether the atom is an association of smaller particles of matter, or is really as has hitherto been supposed, the potency of absolute singleness, has discovered the atom to be a close corporation of unknown antiquity, of at least nearly 1,000 members, and increasing through the list of 78 different kinds of corporations or atoms to 238,000 members. The atom then is a complex system. It is stated in "New Knowledge" that the density of the lightest substance, that of the hydrogen atom, is only one sixty millionth of the heaviest, the uranium atom.

Discussion 7. Several mathematicians have essayed to determine the diameter and weight of molecules. Sir William Thompson said in 1870 that about two million molecules of hydrogen in a row would reach a millimetre; and two hundred million million million would weigh about a milligram. A millimetre is about one twenty-fifth of an inch, and a milligram is about one sixty-fifth of a grain. Molecules are associated groups of atoms from two to perhaps thousands. And the atom contains from 1,000 to more than 200,000 corpuscles moving about at great speed within the compass of the atom. The corpuscle is a newly discovered bit of matter, the smallest thing known to man. The corpuscles do by no means, fill the domain of the atom. Dr. W. Hampson, author of "Radium Explained," compares the unoccupied capacity of an atom and room for the spontaneous motion of its corpuscles, to a gigantic football, empty, except the smallest grains of dust floating in its inside.

These corpuscles may be the naked material whose infinite numbers are the eternal quantitative matter of the universe, and whose correlative positions and motions constitute all phenomena of inanimate, animate and psychic nature. This is saying that all phenomena including conscious, have their source in matter and its

motions. Therefore the universe is a system of mechanics. Matter considered simply as static corpuscles, seems to have no properties but number, geometrical form, and gravitational weight. And in these respects each corpuscle is a copy of every other. And all properties and functions whatever arise from, or are involved in, the forms of construction, the modes, directions, and velocities of motions of these minutest parts, and these grouped into atoms, these into molecules, and these massed into meteorites, planets, suns, and nebulae. From whatever source corpuscles are derived, and from the varied methods of their investigations, they reveal themselves as homogeneous in all respects except their motions which differ from 10,000 to 100,000 miles a second. We need not be surprised that nature's differences arise from a basic undermost that is all alike and destitute of properties except mass and motion. Chemistry shows distinctly that properties arise out of constructions of material elements, which elements not so constructed, contain not a trace of the distinguishing properties. Life, as a property or function, appears to inhere in a definite construction of certain chemical elements. In other constructions of the same elements there is no life. Among nature's wonders is the fact that the differences that distinguish things, properties, qualities, functions, and uses, are evolved from constructions whose constituents are destitute of the properties.

We have no reason to hold the exactness of mass, form, and number of elemental atomic, and molecular pieces of matter which nature builds into exquisite structures, are telelogical affairs, with the designed purpose to realize the properties, functions or effects of which the combinations are the evolutional cause. We have every reason to believe that matter has forever existed, and whatever becomes is involved in its nature. As intelligence is a consequence of chemical exactness of combinations, chemical combinations cannot be the con-

sequence of intelligence. We have no need to hold that the adjustments of relations in nature and means to ends presuppose intelligence as their reason. The laws of nature are nothing but the interrelations of its parts, and are involved in eternal existence and are its modes of existing. The saying is not true that nothing can be gotten out of things that is not in them. Light and heat and colors come from the relative positions and motions of matter. A beam of light from the sun is white. But analyzed by the prism it is divided into seven differently colored rays, not one being white; and each color is determined to be what it is by the rapidity of the motion the ray is in. We are told by the scientific investigator, that the red ray undulates 477 million million times a second, and the violet ray 696 million million times a second; and 39,000 waves of red light, and 575,000 waves of violet light would measure an inch. "And as light travels 184,000 miles per second, that length of ray streams into the eye each second. A wave of violet light trembles or pulsates in a second, 727,000,000 times."

Discussion 8. Our different sense organs and their unlike functions have arisen from and are constituted of cells which in their origin were the exoderm or skin layer, and were either alike, indifferent to, or alike susceptible to the varied stimulants of the environment. The brain is also developed from the same embryonic outer skin layer, upon which the vibrations of the outer world have for unknown aeons been beating their likeness and building material forms, making infinitesimal increments of effects, preserving the same and sending them down the line of descent from the one celled organism, the moneron, through all intermediates to the many million celled organism, man. The organs of the special senses and of thought being thus produced, educated and adapted to appreciate the objects have originated and built up their material forms, and endowed their functions. Then what the normal and especially trained

senses testify to, cannot be called in question by any better qualified or more truthful witness. This may be put against the idealism of Bishop Berkeley and Immanuel Kant. Of all search for permanent existence, the eternal sensible world is universally presented and pre-eminently verified, and the proof of other facts rests upon the verity of it. It has produced the sense organs and the thought organs, and their functions of sensation and of thinking. The internal or subjective is the product of external objective nature. Self is a localized, specialized, vitalized, psychicalized bit of material nature, brought to the clear and distinct function of external perception and of internal feeling and reasoning. As Prof. Clifford says: "Reason, intelligence and volition, are made up of elements themselves not rational, not intelligent, not conscious."

Chemistry everywhere surprises by the appearance of properties in compounds that do not belong to their constituents. For instance, sulphur, a solid element, and oxygen, a gas, in neither is there a trace of acidity, combining as SO3, and still there is no property of acidity, but let a little water be added (but water is not acid) and immediately we have sulphuric acid, one of the most powerful acids known. Of what can chemical properties be conceived to arise in compounds which properties are not in their constituents? From the mechanical arrangement of the constituents and their direction and velocity of motion, as they form the compound. They determine the properties of a thing. The riddles of physics, chemistry, life and psychics, are reducible to mechanics. "The arrangements of atoms is of as much significance as either their proportions or their kinds," says an old chemist. The origin of life on our planet is a question of prime interest. And its first aspect presented is, is it eternal and co-extensive with matter? i. e., is matter living, a property as universal as its extent and gravitation, —or is life a natural local property of a specific chemical

construction under a definite constituted environment, as it appears to be? There are those who maintain that life is a property of matter, and as universal as matter. This requires evidence to be given of all inorganic matter as being alive. This is impossible to be done, except chemical choices and action and gravitation be ascribed to life, for which there is no reason. There is certainly a difference between a dead body and the same body that was before alive. The dead body disintegrates into the inorganic state from which chemistry had raised it, to the organic and endowed it with the property of life. There are only a few of the 78 different kinds or atoms of matter which are factors in the produced life and its properties or functons, at most not more than twelve or fourteen. There are convincing evidences that the earth has been in such a state of heat that no life that is upon it now could possibly exist for no necessary chemical affinity could take place. And there are azoic geological strata in which there are no remains of once living beings. This to be sure, is only a negative evidence of higher forms of life, but none against the lowest forms. It is generally held that life began on our earth. Then is it a natural or supernatural phenomenon? There is no scientific ground or necessity to assume a supernatural. We know of no such existence, nor can we argue from it any consequence. We must put into it by pure assumption all we get out of it. We must therefore, hold that life is a property of a complex chemical combination of a few kinds or different atoms of matter, as it appears to be. Matter and its mechanics must solve the riddles of physics and chemistry and of life itself.

Discussion 9. Organic chemistry, the complicated interrelations of the positions and motions of matter, that which issues in life, sensitivity and thought, directly and chiefly concerns four atomic elements of the 78, carbon, oxygen, hydrogen and nitrogen, with a recognition of sulphur and phosphorus, and a trace of a few other ele-

ments. Organic and inorganic chemistry do not differ except in the greater complex mechanical interrelations of the matter involved in the former than in the latter, and a more restricted environment. Wherever these conditions obtain there is life. And life's properties, operations and functions, are graded upward in awareness, distinct consciousness, power of refection and varied achievement in body and mind, as these material relations are more involved among themselves. Organic chemistry dissolves into inorganic, and life and its functions vanish, because the mechanics of its matter on which life and its functions depend are dissipated. Inorganic and organic chemistry do not differ except in the greater complexity of its mechanics and consequent functional products of the latter. For instance, in inorganic chemistry a molecule of potash has two atoms; of carbonic acid three; of ammonia four; of sugar thirty-four. And as we approach the manifestation of life and mind as results of material combinations and motions of matter which in itself has neither life nor mind, the molecule is the sum of more atoms and these much more complicated in their structure. The molecule of albumen which is near the point of manifesting life, has nearly 900 atoms. And as yet the chemical structure of protoplasm, the material fabric which functionates all forms and degrees of life and intelligence, has not been precisely determined. It was said some years ago to be the supreme problem of physiological chemistry to determine the chemical nature of protoplasm. Albumen approaches the protoplasmic state and function, but probably has a less complex molecule. The amoeba, a bit of living protoplasm, has spontaneous motion, takes in food and turns it into its own structure, grows and propagates its kind. It is without differentiated organs, and is almost as homogeneous as a drop of water. All its functions are performed equally well by all parts of the mass. That this lowly life has some degree of awareness, of feeling

or consciousness and volition cannot well be denied. It may be killed, poisoned or starved, or by raising or lowering the temperature beyond certain degrees. It has irritability which is called the life of relation, or the capacity of becoming affected by its environment and of responsive action. Life is the function of a local, chemically arranged and moving mass of matter; becomes alive by virtue of the matter, its arrangement, motions and environment. Becoming alive and ceasing to live are constantly going on in the body side by side as long as the body as a whole continues to live. Animal psychogenesis no doubt, begins at the dawn of irritational response, issues in sensation, which enlarged, differentiated and specialized in different parts, becomes human in all degrees of feeling and intelligence. Within the compass of matter and energy are involved all the doings and becomings of the universe, since their nature and essence hold within themselves all possible happenings. A feeling of want, however dim and diffused it may be in a living organism, precedes the gratification of it not only, but is the source and cause of the means of its attainment in the production of specialized portions of the organism. This means as I take it, that the responsive effect of the environment upon the living protoplasm is a feeling and an aptitude to direct the nutritive processes to the formation of specific organs adapted to the realization of the created tendency. Heredity preserves the gain, but ages may be required for complete results. Nature not definitely to be specialized, seems first to create desires or tendencies, in living matter, and then produces means for their realization.

Discussion 10. Mind, wherever and in whatever degree manifested so far as mind can trace its origin, appears to be as fully the created product of physics and chemistry which at bottom are but the results of the mechanics of one matter in definite positional relations and motions, as are all other properties and functional

becomings of physics and chemistry. And all life and mind are one at their start in that which distinguishes the living from the non-living, and originate in material mechanics, which are neither living nor mental, as all properties originate in one identical matter or substance. All mentation is upon one common ground of deed and result, from one common perception of nature, because one nature is in all, and actuates all, but in vastly different degrees and ways. "Sir Benjamin Brodie, after an exhaustive consideration of the facts, declared that the mind of animals is essentially the same as that of men. Every one familiar with the dog will admit that the animal knows right from wrong, and is conscious when he has committed a fault." Du Bois Raymond remarks: "With awe and wonder must the student of Nature regard that microscopic molecule of nervous substance which is the seat of the laborious, constructive, loyal, dauntless soul of the ant." And Hubar says: "If you will watch a single ant at work, you can tell what he will next do. On a visit of an overseer ant; when the laborers had begun the roof too soon, he examined it and had it taken down, the wall raised to the proper height, and a new ceiling constructed with the fragments of the old one." Vegetative life even shows acts which, if seen in higher animal life, would be ascribed to conscious purpose. All living nature below the human and higher animals, discovers acts and results which from analogy might be explained by infering local self-conscious activities directed to a purposed end, were there not a broader ground of definite acts and precise ends than volitional, which is neither cognitive nor conative, that is, acts and results from physical relations only. The whole domain of astronomy, physics, chemistry, meteorology, growth, death, decay, are intensely orderly and must be, because of their material causal relatons, without disclosing the factor of intelligence. All the processes of inanimate nature and most of those of animate, take place without

discoverable directive intelligence or purposed end. Where the psychological and teleological are manifest factors in the universe is comparatively a very small part, and confined to human and higher animal life. There must be in the inanimate the cause of the animate. Life comes from the non-living, and is but a property, quality or function of some local, specific, chemical and physical relations of particles of matter. Life is a state of matter. This is manifest, since the animate state reverts to the inanimate by the disjunction of the material relations which caused it. Besides, our dead food received into our living bodies, digested and worked over by life's processes, which are but intricate chemical and physical, comes thereby to be living and takes the place of the once living particles of matter killed by living, that is, chemically disintegrated. The experiments of Pasteur and others, from which somebody has constructed the unauthorized formula of doctrine: All life from life is simply an example of dead matter received as food into the living body becomes alive. This and nothing more. The living body is a chemical laboratory where the living structure having prepared its successors, in the moment of dissolution at infinitesimal points, bequeaths as it were, its place and its life, to the matter that shall occupy its place and assume its functions. The animate state, forms and functions of matter, appear no greater or more impossible for unconscious nature to effect, than many other chemical results where no consciousness or purpose is supposed. For instance, oxygen and hydrogen uniting in certain space and motive relations called chemical, lose their individual forms and functions and assume those of water, by virtue of their structure. The wonder would not be lessened by supposing intelligence as a factor in the change, but rather increased, for how intelligence could effect it is as inconceivable as how it could be effected without intelligence. What Pasteur and his colleagues did was purposely to kill all life in their

decoctions and prevent all living germs from entering, then wait to see what would happen. When they succeeded, nothing happened but the putrefaction of the contents of their test-tubes. When they did not succeed in destroying all life in their tubes, or did not prevent living germs from entering them from the air, the germs found food, ate, developed, multiplied, and converted the dead matter into living beings just as is done out of test-tubes. And their experiments had no more bearing on the question of how life originated on the earth, than what is constantly taking place in all the living world. It may be declared an empirical fact that life appertains to only about one-seventh or one-sixth of the known chemical elements of matter, and is a property of a specific chemistry of a few definitely constructed atoms. According to the latest scientific view, all atoms are constructions of one homogeneous matter in much mniuter division than the atoms. And atomic difference in nature and properties results from difference of construction of what differs only numerically. Therefore, for these two reasons life is not a property of matter PER SE. But like all other properties and functions of matter except extension and gravity, it results from definite constructions in space order, and motions in space and time orders. Therefore Haeckel is wrong in advocating hylozoism, defined as the doctrine that all matter is endowed with life, "which makes every smallest part of it to have life essentially belonging to it." There is a physical and philosophical necessity to hold that life on the earth began in non-living matter by some natural but non-vital causation. Because the dead world is immensely greater and more general than the living world, and no living matter continues alive but comparatively a short time and reverts back to the inanimate state. And there are sufficient scientific reasons to hold that the whole solar system has been in that incandescent state, which would render impossible the physics, chemistry and physiology

of living phenomena. And science knows nothing of a supernatural cause, or effect, or method; nor can we conceive a supernatural; nor is a supernatural a necessary or self-evident truth. Supernatural is a word without intelligible meaning, and must remain so until the sum of the natural is fully apprehended and comprehended. Therefore all things that are and that become, are natural.

Discussion 11. Matter gives no evidence of having begun to exist. From necessity of thought its beginning to exist without cause, or self-caused, must be denied. From the nature of the case the scientific proof of the causal beginning to exist of matter is impossible. The allegation of its beginning to exist is not necessary and is not self-evident. That there is eternal, substantive existence or existence that never began to exist, and by consequence, can never cease to exist, is a necessary and self-evident truth. As an existence resting in thought and physically persistent in quantity in all changes, and as that which in space positions by its motions changes in its properties and function, in now being alive and now not alive, and therefore the seat and ground of all phenomenal becomings, matter answers all the requirements of necessary postulated eternal self-existing, and we may say, *therefore* self-phenomenating existence. So all ground for alleging the impossible feat of the creation or annihilation of the material universe or a grain of matter, is negatived. Nature or the universe, comprehensively, are matter, space and time. Its details are all changes of matter by its motions in related space positions, and consequent becomings and ceasings. Nature then, cannot be transcended in extent or content. Life, and all life means is but a state and function of matter, and has its complete cause in nature. Matter is the only substance, i. e., known to persist without change of quantity. Mind or mentality is not a substance, i. e., does not persist. There

is no mind where there is no life. Life is as much a changeable state of matter, as the non-living from which it has come, and to which it will soon revert. All degrees of consciousness are causally traceable to functional activities of complex molecular structures of a material medium, which consciousness in no degree can be discovered in the separated elements of the said medium. This proves that life and mentality belong to a state and condition of matter, and not to matter itself. Life and mind are never known but as phenomena of chemically constructed matter. The analogy and prophecy of consciousness and intelligence by gradual approaches are seen in the use of properties in simple chemical combinations, no trace of which can be found in their separated elements. This seeming magical coming into being of a *nature,* a *capacity,* a *function,* in a synthesis that do not in any degree appertain to its analyzed constituents, are seen in inanimate matter, are seen advancing towards consciousness from the lowest to the highest vegetal species; recognized in the most inferior species of animals; becoming distinctly intelligence in the higher animals, and has reached its highest maximum of reason and inference in the human. All advance is the result of growing complexity of the mechanical constructions and conditions of matter. The material constructions whose properties are life and intelligence are chemical and physical. And these are but more or less intricate mechanics. So the mechanics of matter are sufficiently causal of all becomings and ceasings whatsoever. And man is the most materially complex, as he is the highest and most variedly phenomenal of all known objects. There is no known substance, i. e., persistent, to which properties, including life and intelligence belong, come and go, but matter and its physical changes. The argument against these positions is the bald assertion: "Matter and its physics cannot account for mind and mentation." All needed reply to this assertion is: point out

and verify some other substance whose specific state and condition is alive or not alive, feels, wills, chooses, knows, limited to numerical portions of small extent and of temporary continuance, then all these manifestations cease; but the substance which is their seat, remains intact in quantity and in full capacity for revivification and intelligence. But question: would the consciousness of the old personality with memories, be restored? For evidence that matter is all that we claim for it, there is scientific evidence. But for the claim of an immaterial or spiritual *substance* that forever lives and spontaneously feels, knows and acts, (and this is the essential nature of man) there can be no satisfactory evidence of, but its personal experience, and this can be obtained only through death.

Discussion 12. There is nothing more amazing for it is comprehensive of all that amazes and of the amazed. I mean that all difference in the phenomenal universe of whatever becomes and ceases, may be traced to changes in and issues from one material existence or stuff, effected by and upon itself. Atomic differences of matter until quite recently, have been held to be so either eternally, or to have been so created, and atoms could not be resolved into constituent parts because they had none. Says Sir Isaac Newton: "It seems probable to me that God in the beginning formed matter in solid, massy, hard, impenetrable, movable particles of such sizes and figures and with such other properties and in such proportion to space as most to conduce to the end for which He formed them; and that these primitive particles being solids are incomparably harder than any porous bodies compounded of them; even so very hard as never to wear or break in pieces; no ordinary power being able to divide what God himself made one in the first creation." But the constituents and mutations of atoms have now become a demonstrated physical fact. And it is in evidence that these differences are differences of num-

bers, constructions and motions of bits of one matter 1,000 times smaller than the smallest known atom. These smallest known particles of matter are called corpuscles. Atoms disintegrate into corpuscles. And uniting again in a different structure, become a different kind of matter. In all parts of the universe open to our observation and experience, construction and environment determine property and function. This is evolution, not creation. This denies an absolute beginning of substance, denies there is but one substance known, i. e., perdurable existence, or that which is the subject of all change, but never a change in quantity, and affirms that it holds within itself all possible properties and functions. And from the concrete and psychic world around us as evidence without a contradiction, science has now found the same law operative in the undermost existence yet known. The atoms or chemical elements are all built up of corpuscles as it now seems, which "whatever be the source from which they are derived, whether the ordinary air, or from the hydrogen atom, carbonic acid, glowing metals, dull lead or gleaming gold, a candle flame, or burning gases, they are in motion at from 10,000 to 90,000 miles a second. They seem one and all of the same nature and size, and so small that they readily penetrate all masses of matter, even a foot thick of solid iron. Not the least evidence of man's skill in searching out nature's hidden things and doings is, that the minute mass, the weight and the number in a given space and the speed at which they move, have been proximately determined of the corpuscles." How the corpuscles (Sir William Crookes' prophetic fourth state of matter) were discovered and by whom, their historic behavior and the implications which they suggest as to the universe of existence and change, may be learned of books treating on the subject. The world of thought in chemistry and physics has been shocked, carried away from its moorings during the past ten or twelve years, comparable in

its epochal effect to the once discovery of a new astronomy, in that the sun and not the earth is the commanding center of our world system. Our physics determine our ethics, our psychics, our theism, and our place in nature. A radical heterogeneous element well authenticated as to its validity, entering our ultimate philosophy produces derangement and demands readjustment of the whole scheme. "Thou canst not stir a flower without troubling the stars." Such has been the effect of the discovery that the atoms are disintegrating into portions of matter 1,000 times smaller than the smallest atom. The weights of the chemical elements vary from 1 to 238. And the atoms may be arranged in groups with some property resemblance, as their weights are near each other. When their relative weights began to be studied, it was thought that the heavier were exact multiples of the lightest, so that all the rest were compounds of the hydrogen atom. But this was found not to be true. For after dividing the weights of the other atoms by the unit weight of the hydrogen atom, it was found that a remainder was left in many cases that could not be satisfactorily ascribed to error in manipulation or calculation. But now that it is discovered that the hydrogen atom is a mass composed of nearly 1,000 smaller pieces, essentially all alike, it is probable that the weight of a corpuscle will exactly measure the weights of all the atoms. Indeed it must, if the corpuscle is the ultimate divisibility of matter, and not itself the assemblage of still smaller pieces; or as some believe that matter is divisible without limit. But the sciences, especially chemistry, indicate that matter is divisible only to a limited extent, and ultimately exists in fixed separated quantities. There is a philosophical difficulty in conceiving that matter eternally self-existent should be in 70 or more primary and unchangeable difference. In which Herschel and others saw ultimate facts in atoms and their differences which indicated to them "manufactured articles." But eternal matter in

one simple identical entity in numerical multiplicity loses its philosophical suggestion of manufactured articles; especially in the light of the necessary logical and physical truth that, if there is anything but space and time, there must be eternal, uncreated and everlasting quantitative substance. The corpuscles in their present conception, suggest that the ultimate substance of the universe in its infinite difference of phenomenal forms, properties, qualities, states and functions, has been come upon, and that it is not infinitely divisible as some have supposed, but is fixedly limited to separated equal quantities, in one and the same form, with equal capacity and aptitude to become part of any construction that manifests any property or function under the same circumstances. The manner of the building of atoms from corpuscles and molecules from atoms, and masses from molecules, with the environment, determine properties, states and function and strongly indicate evolution in inorganic matter, and of necessity systematic order in the mechanical arrangement in the structures to insure definite results as we see; advancing to greater and greater complexities from the simpler inorganic to the organic, vegetative, prostistic, animal and human, life and mind; realizing that from one identical substantive entity all differences proceed. This is the philosophic goal of all the sciences and of all philosophers. And it is worthy of remark as bearing especially on the development of my thesis, that in this latest, most fundamental and innermost insight as yet into the universe as one and all, intelligence and designed action to an end are neither discovered nor implied in the existence of matter or its persistent numerical divisions into forms all exactly alike in size, nature and aptitude to become part of any structure, property, or function. For regarding the universe as the whole of all that is, intelligence and purposive action to an end, are comparatively late, rare, individualized, temporary, phenomenal effects; then only

slight, partial, cause. Cause has no application to that which is and always has been. And the universe is the object of this conception and necessary affirmation. In this conception are three fundamental, non-interchangeable, non-erasable, differences, that intelligence cannot intelligently in any degree affirm itself to be the cause of, but must, if it avoid absurdity, affirm itself the effect of, viz: matter, space and time. From which all differences are evolved, including life, intelligence, and purposive action to an end. Cause is involved in uncaused existence and its motions. I am aware of what Kant and idealists make of matter, space and time; nothing objective, but wholly subjective. Things are not until thought. And then nothing but thought. Things must conform to our manner of thinking them, and not our thought must conform to their existence, and manner of existing. Then what is truth? As you think it. But never objectively real as it seems, even if you so think it. Intelligence through the senses has imposed a deceptive reality not only upon the whole human race, but upon all animals as well. For all act as if the external world were objectively real as it seems. But can we be sure that thought can bestow objective reality? By what criterion? And what is the value of the subject if there is no object according to our sense perception? It is difficult to see how thought can create or be aware of a self that thinks. For what a thing does must be different from that which does it. And I cannot clearly distinguish myself, that which feels and thinks, from the feeling and thinking. Descartes says: I think, therefore I am. If his thinking distinguished the I from the thought of it, the I must be objective to the thought. But as I venture to believe, not from clear consciousness of a self or thinker as distinct from feeling and thinking, but as inference or implication from thinking and feeling. Whereas we have clear and distinct consciousness of the objectivity of the external world through the senses. And the senses are

viewed as caused by the impress of the external world upon living matter. Therefore the highest validity must be accorded to the external world. And being causative of our sense organs, it must be also of their functions, our sensations. The external creates the internal. This relates to the unconscious world as cause of consciousness, feeling and thinking, without design or purpose of the end. If designer is supposed it must be accounted for. The universe must be intelligible to itself, and self-explained, if it be explained. For it must involve, include, all that is to be explained, the explicator, and the explanation. The intelligence that deciphers its intelligibility must be part of itself. There is no beyond in any sense of the word beyond, or within the universe, that is not of it, that can be demonstrated to be so, or give a scientific reason of it. Whenever a thought is conceived that has no provable reality that the thought represents, whose existence, properties or capabilities are neither necessary assumptions, self-evident truths, or for which we have no scientific knowledge, and the inferences we draw from it as if it were objectively true, or the concrete facts we allege of it, are solely on the ground of our religious faith, that is, such as we invest it with, it cannot be a legitimate explanation of any objective thing. Such is all theism as explanatory of the universe. Here is no known objective entity or truth corresponding to the thought.

Discussion 13. The universe is a systematic relationship of differences. For whatever conforms to the relational orders of space and time must be, and all things do and must so conform. The universe then, is inter-explanatory. And as the primal necessary postulate or assumption is eternal uncreated existence and neither creator nor creation; and as neither creator nor creation from nothing can possibly be proven, or be rendered possible to reason by any analogy or any need after the universe exists, and it is necessary to postulate existence

and not creator or creation of existence. It follows then that the universe is the universal all. It is evident that things begin to be as they are from something different that preceded them and is their complete natural cause, and not from being created out of nothing. They come by change of form and evolution of property and function simultaneous with, and in consequence of, the new form, the internal arrangement of parts, and environment, all things causative and conditional being complete and sufficient. Motion is implied in any change whatever. Motion then is the universal mode of existing of matter, and no more imparted to it than was its creation. Becomings that take place without intention, purpose or intelligent action as cause for doing so, compared to those that have these causes for doing so, are as infinity of numbers to unity. Existence without beginning to exist, must forever continue without ceasing to exist. Matter and its necessary presuppositions, space and time, are the only quantitatively unchangeable objects of our experience or thought. If matter is the one and eternal substance, and motion and not rest its universal mode of existing, its motions and collisions, and change of forms, properties and functions, in unending ages, cannot wear or lessen its quantity or capacity to continue as it ever has. It is in proof that matter is everywhere and always in motion and neither less nor more than it ever has been. All things are mutable in forms, properties, qualities, functions, states or relations of some kind into other kinds. And all kinds of mutation are included in the orders of space and time, for they involve motion. And motion, mass and structure are embraced in mechanics. While the processes of change must be conceived as always and everywhere going on, we are by scientific discovery and philosophic reasoning, constrained to hold that there is one eternal quantitative substance that takes all forms, and assumes all properties, etc., and not many unlike substances, or even two. Force or energy is not a

substance, but the universal manner of existing of matter in motion. The universe of matter and every part of it, from the needs of philosophic thought and the determinations of science, appears to be and ever to have been, in perpetual motion. And what is universal and eternal cannot be duplicated by creation, nor can the always existed be annihilated. Motion of matter may take any direction or velocity in relation to other masses, molecules, atoms, or corpuscles, always determined by the nature of the case. There is said to be an absolute degree of cold, about 273 degrees Cen. lower than which there is no molecular heat-motion. This may be very likely as a mathematical deduction. But it may not be a physical fact. The genesis of forms in both the inorganic and the organic world, and especially of the properties and functions of the forms, when one substantive material is common to all forms, is still a mystery of nature. How the two gases for instance, uniting (and why should they unite, and what is the manner of their union?) lose all their properties as gases except weight, which reveals the fact that the identity of substance and its quantity is preserved in becoming water, with new form, properties and uses, are problems without successful workers, so far as I know. And the whole departments of chemistry, vitality and psychics are involved in the problem, and its solution. But wood and other materials may be united into structures by various artisans, and take on properties and functions belonging to the forms, and there is no mystery about it, for it is so crass and open to inspection as to be understood. It seems as legitimate as any inference can be where the processes of cause into effect are beyond inspection, that chemical constructions of atoms of matter, under a definite physical environment, all which are precisely exact in kind, number, weight and measure, beyond manipulating intelligence to effect or adequately to appreciate, are the complete compliment of causative conditions for all results

that follow, whether in the inanimate or animate world, without supposing previous designed end and a deliberate choice of means to reach it, as procuring factors. If we feel constrained to go so far because of evidence of purposed end and adaptive means to reach it, the demand is upon us to go further. What signified the infinite multitudes of microscopic living beings, and parasitic plants and animals, which if life is pleasurable to the animals it is equaled or exceeded in discomfort by others caused by their lives. And how estimate the value of any life, when the most exalted and advanced according to our standards, may be taken to satisfy and prolong the life of micro-organisms of infectious and deadly diseases. And how shall we estimate the character of a being who had the power but under no compulsion to use it to effect such results, but should purpose and execute the tragedy; or if such results might occur naturally from the working of a general principle that had been created, if not specifically prevented, and it was not prevented but occurred, would the responsibility be less than if purposed and executed by deed? Persons who believe in the creation of the universe and the volitional adaptedness of one thing to another as cause and effect, through a free primal choice to have them as they are and ever shall be, world without end, must hold that all events transpire when and where and as they have been predetermined. This may do as a view of inevitable necessity, because all things are involved in one eternal orderly connected system, but not produced by a creating and determining agency, either outside or inside the system but not of it. The universe or nature is evidently one interrelated whole. But there is no discoverable agency or need of its postulation outside or inside the universe, but not of it. There is nothing valuable or detrimental but sentiency, using the word for all degrees of physical and mental pleasure and pain. Experience and observation make known to us that probably the

sum of suffering of the living world is equal to, if not greater than, the sum of positive enjoyment. And if this is purposed and brought about by some volitional creative agency, or is the result of blunder, does not deserved blame attach to the agency? It would attach to human agency in the judgment of the most advanced and humane jurists. Proprietors of hazardous employments are required to be responsible for the safety of their workmen. It is a universal feature of all animal and human life, that no life can be sustained but at the sacrifice of some other life. The conquest of life over life goes on, wherever there is life. And the life of no animal is surrendered without pain and unwillingness manifested by struggles to avoid death, or mute pleadings that it is hoped no living being above man, if there is such, could endure the appeal to without immediately righting the universal wrong if he were able. But as this has never been done, and death is as universal as life and erases all advance, and if life is a created good, death is its full and complete cancellation. For of what consequence is it to me that I have lived when I am dead forever more, no matter how long I have lived. To have consciously, actively and joyously lived, can have no possible value when consciousness and memory are extinguished, and in every sense we are as before we were. So we may righteously conclude that life is not a volitional gift of a loving Almighty father, possessed of infinite knowledge and goodness without the opposite characters. But if life with all its disasters is functional property of eternal uncaused existence, and of necessity we must affirm such existence, and neither absolute creation, nor creator, nor beginning, is a necessary averment, or a discoverable fact, then no blame attaches anywhere nor can be awarded. Man must help himself to all advantages nature puts in his way, and relieve himself of all disadvantages, for that there are supernatural beings that he may effectively call upon in his need, are

but illusory pictures in his imagination, not verifiable anywhere else, or more substantial or abiding. But it is what much of the world believes and trusts to in the future, but never finds it true to sense perception. Realization is put off and hope flattered. It never is, but always to be what you desire and expect. But the cause can never be shown to be what you call it.

Is life the function of organization, or is organization the function of life? Or is life the universal property of matter as extension is, and matter the product of absolute creation? or is matter eternal and uncreated, and the universe itself containing all the reasons of all its becomings and changes through the relations of complete casual antecedence and consequence? And it should be remembered that not one thing alone not further analyzable, is ever a complete cause, nor is one thing not further traceable, ever a complete consequence of cause. This is evidence that the universe is one systematic whole. That anything can be its own cause for beginning to exist, or can begin to exist without cause, are self-contradictory. Creation asserts the language of a process. But it is impossible to think that a process upon nothing could produce something. Creation presupposes time for the process, and space for its field of operation. We cannot suppose either of these conditions to be created or caused to be. They are necessary validities of eternal being, and are essential parts of the universe. The substance or matter of which is eternal and ever enduring as are the validities space and time, if anything really exists. The phenomena of radiant matter have no other explanation than its attenuation and the mechanics of its positions and the forms, directions and velocities of its motions. These differences determine the dissimilarities of radiant forces from mass-forces, indeed all properties and functions of matter.

Discussion 14. There are convincing evidences that the solar system, then by almost necessary implication,

the whole material universe, has been in a state of extremest, dissipated attenuation, through the expulsive power of heat motion. This would have been incompatible with chemistry, physics and astronomy, and all life. The heterogeneity of material properties as now presented were lost, but involved in its homogeneity; all differences in abeyance but the entity of matter and its mode of existing in motion. We say there are evidences that matter was once in a state where density by attractive coherence was not, and matter stood forth in the absolute nakedness of its single entity, where dispersion had reached its utmost limits. But universal gravitation the supremest wonder of all material properties in which are hidden the initiative of all affinities, inorganic and organic, the inexhaustible and unchangeable into any other mode, the mutual tendency of every particle of matter in the universe to approach and coalesce. And by the natural action of this relation of matter upon matter, the operations of the earth and celestial bodies are rendered intelligible. This universal interrelation of matter cannot be quantitively effected, does not require time for its transmission. Then it was not transmitted, was not a property imposed upon matter, nor incorporated within, is not extrinsic to, cannot be separated from but belongs as an eternal uncreated and universal nature of matter as mode of existing in extension is under the imposing order of space. It manifests the unity of one material entity definitely divisible. The law and measure of the action of gravitation have been discovered, but not its how or why. And it is hardly likely that a specific cause for it will ever be made out. As it seems probable that this universal relation is as much involved in its nature as its existing and extension in space.

It is not pretended that it is known or can be proven that matter came into existence by creation, and has been distributed in space by intrinsic force upon it; or the atoms have been composed and distinctive natures given

them that characterize the different kinds of matter as known in chemistry, physics and radio-activity. Sir William Crookes' fourth state of matter. G. H. Lewes says: "We cannot conceive an individual without in the same act implying a class to which it belongs, and a larger class from which it is distinguished." The notion of a creative act with the knowledge of its objective fact issuing in existence, or a creating agency, cannot be formed. Nor is the creation of matter a necessary postulate, or its creation a conclusion of our experience or reason. For matter shows no marks of having begun to exist, or is in a state of decay and waning to extinction. And this is proof of its having always existed. For what always has existed must continue forever to exist. And eternal uncaused existence is both a necessary primal assumption and the conclusion of our reason. While the only persistent quantitative existent known, or we can conceive or have ground or need to affirm, is matter.

Before men had developed the scientific consciousness and but feebly philosophized, creation and annihilation of matter seemed real and not difficult to accomplish, and consistent with experience. It is only the latter part of the 19th century that there was established by scientific proofs the quantitative persistence of matter and energy, the mechanical equivalent of heat, and the mutual convertibility of the forces or energies, except the participation of the gravitative force, which gives to gravity a uniqueness of character and stamps definiteness of quantity and unchangeable form upon it, which other forces—light, heat, electricity, galvanism and magnetism, do not have. Life is living matter, a state, a chemico-mechanical structure of metabolic moving parts. A primal sense intuition should and does generate the conviction of knowledge of objects. What the child is told he accepts readily and shows no disposition to question until deception has taught him better. His native tendency to know cause and to feel the emotion of won-

der renders him a ready subject of religious sentiment, which satisfies his yearning for cause and gratifies his wonder. If religion implies the conception of a being in whom man is bound to believe, and to whose worship he is obliged, and these attitudes are native and spontaneous, they are as clear and distinct in the savage and barbarian as in the cultured. And polytheism is as convincingly true as monotheism. And the divine object resting not in demonstration, or tested sense perception, but in the faith of somebody's construction, imagination and declaration, one object, visible or invisible, is as good as another, if it satisfy for cause and gratify the wonder. In his Primitive Culture, Edward Tylor says: "No savage tribe of monotheists, have ever been known." And polytheism has been as satisfying to its devotees as montheism to its; and Mohammedanism and Brahmanism as Christianity.

But the cultured imagination during the ages past, has constructed an abstract being and endowed the product with the language transcending nature, or the universe of matter, motion, space and time, and of creating the same, and it has become a wide spread religious dogma. But it is not favored by science or a scientific philosophy. For a dogmatic creation, resting alone on somebody's say so, who, of course, could not know, cannot be an intelligible and final explanation about anything. For the assertion goes beyond the informant's knowledge. And the attempted exegesis suggests greater mystery to be explained than that for which the explanation was devised. Since we can have no conception of a creating agency of matter either transcending space and time, or within those orderly limits, and no suggestive illustration of how a world or a particle of matter could be created, or where such a being could be and produce material existence from non-existence, and no intelligible or verifiable proof that creative acts have ever been exercised. To say that this being is omnipresent and there-

fore no visible presentation or adequate conception is possible, and still the being is declared to be a personality, is both to deny the unequivocal assertion of the claimed divine revelation and the human verifiers of the revelation. "The Lord spake unto Moses face to face, as a man speaketh unto his friend." "Then went up Moses and Aaron, Nadab and Abihu, and seventy of the elders of Israel. And they SAW the God of Israel." It is true there are as distinct denials of the visible presence of the creator of worlds and builder of star-systems, as affirmations. John the Baptist is reported as saying: "No man hath seen God at any time." And it is further true, that when these affirmations and denials were written, the astronomy of today was not dreamed of by those who made the writings or those who believed them. And notwithstanding after the worlds became visible through the telescopes, and mathematics had demonstrated the immense magnitude of the sun and stars, and their great distance from our earth, the earth's revolution on its axis as the reason of day and night, and its passage round the sun completing the seasons, these natural things were rejected and contested by the advocates of a claimed divine revelation. And many today who know the falsity of these writings still profess to believe them, and express surprise when one hints at the falsehood of these writings: "What, don't you believe the Bible!"

There are presented in many affirmations of the Old Testament, the visible and audible appearance of a human-like being declared to be the God of the Hebrews. The sun's rays would evidently have photographed such a physiognomy. But the Christian God of to-day is very different from the Hebrew God of the Pentateuch. These can only be shown to be one and the same by theological thaumaturgy. Is not this metamorphosis ceasing to be man-like and become omnipresent a virtual rejection of an objective linguistic revelation, and the developing race outgrowing the drivelling of its infancy? If God is

identified with nature or the universe, creator and creation of the universe is abandoned. For self-creation is self-contradictory. We cannot get rid of the universe. It confronts our senses and experience every moment. We have no need of two expressions so opposed as creator and created, when we can no longer aver creation, and it cannot be realized in thought. Not that every proposition that transcends thought-experience is to be rejected as absurd or untrue as objective fact. The non-limitation of space, the non-beginning and non-ending of time are necessary truths, that we can never construe in appreciative thought. And their contraries are as necessarily false.

It is admitted by cultured intelligence that no adequate mental picture of a being characterized by the attributes ascribed to the Christian God is possible. Sir William Hamilton, a Christian advocate, says: "To believe that God is as we can think him to be is blasphemy." Query: When we pray, is our petition addressed to an idea or mental picture? If our thought is not a copy of God's character as it truly is, in what sense do we address and worship the true God? If a thought-picture of God as he is, is impossible, how is such worship less idolatry than worship of a visible picture? Then he has not been truly revealed, for he could not be. Are our prayers more than our thoughts or expressed desires, and our sentiments more than a matter of feeling and word-framing? But how can we picture to ourselves a personality as omnipresent, whole and entire in every point of space, but does not occupy space, is separate from every particle of matter. And what warrant have we that such a being exists, or we need to affirm or believe there is, or such a being could or did create the material universe, or that it was created, or began to exist. There is no proof of it, but the declaration of somebody who did not know. The proof of this negative is not upon its asserter, but the burden lies upon the affirmative. It can-

not be proven by the allegation found in a book, on the pretense that it is a divine revelation, resting on the testimony of some persons that the allegation is made by God either direct, or that God authorized a prophet to make the record in the book. For the antecedent probability is infinity to one that such human testimony is false rather than true. All causes and effects appreciable and provable are natural. There is no appreciable proof of a supernatural, except by the exclusion of the natural by the complete knowledge of all its actualities and possibilities. Nor is the supernatural a necessary and inevitable postulate. That the natural is not the universal all; that the material universe is a created thing from non-exisence, are arbitrary and needless assumptions incapable of adequate proof. And by consequence the universe is the eternal uncaused, self-ongoing existence that must be the primal postulate. And such first assumption is inevitable. And this negatives all need and all proof of creation. All life is an experience and verification of the reality and sufficiency of nature to be all and do all. A being wholly unknown and inconceivable, whom no man has seen nor can see, a fiction of the infancy of the race of unknown aeons ago, and for most of this past time, and for most of humanity, Gods, one or more, have been the universal enlightenment of all human ignorance. But no record of a fiction can be authenticated by any number of repeated records, by any number of believers, or any length of time believed. But now by the best informed and least superstitious, the creation of the universe or the interference of a divine being in nature is never proposed as explanation of any thing. For it is a verbiage that evidently cannot explain any mystery, nor are we made wiser by being told God did it.

And it seems inconsistent and a marvel, if there is an omniscient personality who is also the loving father of mankind, that he should sweep off hundreds of

thousands of his people by tidal waves, earthquakes and epidemics, when notice of coming events would enable the now doomed to escape. But human life appears no more sacred or more endeared to the maker of all, than the most insignificant insect life. This world appears very remote from being governed by moral laws, notwithstanding the preachers tell us it is. Heaven is as silent from rebuking wrong, as from rewarding virtue. The superstitious, however, give large credits to providence. But this determines nothing.

Discussion 15. Man has discovered by his developed intellect that, if anything exists, and that there does, his senses assure him beyond doubt, there must be existing that which is eternal and uncaused. And *that* existence is infinitely more likely to be the existence of which all is composed, of which we know something, and has been determined to be in quantity forever persistent, since what exists without beginning to be, must exist without ceasing to be; and not existence of which we know nothing and is not thinkable. Eternal and uncaused existence is the necessary and universal primary postulate, and not creation nor creator of existence.

In my denial of the supernatural and affirmation that nature or the universe is the sum total of all there is, I do not argue against the possibility that human conscious personality may continue after the death of the body, although I do not argue for it, for I do not know any reason for it or any possibility of it. On the eternal permanency of matter in the past and the future is our hope, not that it was made from nothing, and we are to continue life through divine grace. If some of the matter of our body which is animated and intellectualized may undergo a higher development and capacity as does the germ-seed in uterine development, and escapes at death, and is the significance of natural death, as matter vitalized by its relations for indefinite continuance and capacitated for indefinite progress, as some seem to

think, my views do not antagonize. What is done, nature does, and cannot but do under the circumstances. Suns and planets are perpetuated in the aggregations of matter in aptness, to initiate and minister to immense difference of lives in succession and continues for unnumbered ages. *The secret of life will be discovered some time, how to initiate it and how to continue it.*

If the universe cannot be the uncaused existence which must be granted as a necessary first truth, because of its greatness, grandeur, multiplicity and complexity, and everlasting, self-ongoing in undiminished power, as planned and executed by a master mechanic, how can a greater impossibility become actualized in our assent. Should we seriously put to ourselves the question of the bringing into existence from non-existence the material universe, and the mutual relation of things? For surely the being declared to be the creator must be supposed to surpass all reasons urged why the universe cannot be the existence that must be eternal and uncreated. And how can he be eternal and uncreated, and in addition create the universe? It is very plain that there is no ground for its belief or propagation as a dogma, but arbitrary human assertion. The universe is the eternal uncaused existence which becomes the primal postulate, for we know no other existence. And there can be no demand for an unknown existence to create existence that everybody knows. Man cannot be praised for the progress he has made in the knowledge of nature about him. This may be said in his favor, he has all things to learn for himself, and at his death all is lost to the world. His children may inherit his house and money, but not his intelligence. Several millions is quite an aggregate of years. But his imagination is a break upon his progress. He has allowed the wild to lead him. He has ever been expecting somebody coming out of the bushes to tell him something. The great families of mankind have what they call messages of the Gods to them, telling them

about the world yet to occur. But Gods do not agree any more than men do. There is no stronger antagonism. One is reported to have commanded his followers: "Thou shalt have no other Gods before me." And in centuries where there is but one left, one serves all the purposes that many did. This appears to be for faith and ritual. It has now been about 1900 years since all the adherents of the Great Jewish Jehovah agreed among themselves that their God has sent a message, or let himself be heard from.

"1650-4, Archbishop Ussher proposed a scheme of biblical chronology, which was universally accepted until disproved by recent investigation." According to his interpretation of the divine record, not yet 6000 years have come and gone since the world of matter left the creative hands of its maker. Nothing satisfactory can be made out of the Old Testament chronology. These writings were penned by a people who knew not the value of exact truth, nor how to obtain it; by a people who thought themselves to have access to the maker of events as well as of the world. But they as utterly fooled themselves and many more besides their clan. Men who have thought they spake by divine inspiration have always been self-deceived. All we know about theism claims to come to us by divine revelation. But all Gods being human made, their truth takes no higher authority than its source. Every theistic system disclaims every system but its own as false. This is the universal conviction. When every person puts one more theistic system upon the black list than he does, the truth will be equally told about all. Plain promises reported as made by Jesus have been centuries due. For instance, "This generation shall not pass, till all these things be fulfilled." How many zealous persons during 1900 years past have thought they have found a clue among the claimed prophecies, and have set a time for Jesus to appear in the clouds of heaven. But evidently Jesus knew

no more about his appearing in the clouds after his death, than any one now knows of his own so appearing. That he ever said so, may well be doubted. What he would have put in writing in his own behalf had he thought he knew anything worthy of being recorded, no one knows. But he is evidently as much a made-up, unhistorical life, by one class of men, as he was robbed of his life by another class of men, in contest about their theism. Other promises proclaimed made by the same God, "Ask and ye shall receive." "If ye shall ask me anything in my name, I will do it." How many mothers have asked Jesus in his name, to save their darling babes from the touch of death; and how many persons starving for food, freezing with cold, dying with sickness, have prayed Jesus for relief according to his promise. But their calamities came all the same as if they had not complied with his request. There was no more the God Jesus to hear and save them than the God Zeus or Apollo. A prayer to one God is just as efficacious as to another. The Gods of every religion are healers to their devotees. For there are states of body and mind in which strong faith in anything as cure, the change made by assurance of recovery is remedial.

Human nature has strong perverse, discordant tendencies, when perfect liberty of discussion and action is allowed. But the race has segregated themselves into large groups or nations, in instances, perhaps, sprung from a single pair, and for many generations with little or no influx of foreign blood. The same nations are standards for morals, for religion, for social conduct, for business, for fashons of buildings, dress and food. Under these circumstances there is no provocation to radical discussion. It would not be allowed by the popular will. Arbitrary governments whether headed by king or priest, are favorable to the device and authoritative establishment of systems of religions, which become part of the civil government. All the great religions of the

world have been gotten up and propagated and defended by arbitrary authority and brute force. To the religious devotee nothing is so sacred and securely true as his notions about Gods and religions, whether fetichistic, polytheistic or monotheistic. But in truth there is no other subject whether true or false, about which something more satisfactory may not be learned. Nature whose product we are, whose methods are most directly and with highest degree of certainty true through the intuitions of the senses. But senses have no common nature with Gods. They, one or more, are not objects of our senses, but of our imaginary speculations with no fixed positive, formal standard. But if he is something to be distinguished from nothing and from everything, must he not be of some definite form? Does to be everywhere, almighty and all-knowing imply anything definite? Is it not a negation upon all definite meaning? But every standard forming something proposed for God, is immediately rejected by the proposer, unless he be too simple to realize the absurdity of his proposition. But this has occurred especially among the Semites. But the world will never know how little or how much Jesus himself did or said to create the eclat of the divine that has clung to his name for 1900 years. But a people who had foisted upon its tribes and some of the brightest portion of the world besides, not Jews, the fictions of the Old Testament can hardly be trusted for either intelligence or historical honesty.

Discussion 16. The Rev. Frederick Temple, D. D., Bishop of Exeter, in an Essay entitled "Religion and the Doctrine of Evolution," as reported in the Popular Science Monthly of December, 1884, says: "Science in its character of science, can never admit that a miracle has ever happened." And the Lord Bishop of Carlisle, as reported in the Popular Science Monthly of May, 1880, quotes approvingly an-

other clergyman as saying: "It seems to me that we want a new word to express the fact that all physical science properly so called, is compelled by its very nature to take no account of God. If I might coin a word, I should say that science is atheous, not atheistic." And Cardinal Newman, it is claimed, said: "It is a great question whether atheism is not as consistent philosophically with the phenomena of the world, taken by themselves, as the doctrine of a Supreme thinking will." It would certainly seem legitimate and within the domain of science to inquire how the subject-matter of all science, the material space and time universe, and the laws of order governing all existence and becomings, came to be. And I can conceive of only two answers possible to this question: either the universe is eternal and uncaused, and the full reason of all that becomes and ceases is within itself; or: the universe is not eternal but had a cause and a beginning, and the full reason of its being and laws of its orders and its becomings are in another. And the discussion of this question must be included in the meaning of science; and the conclusion either atheism or theism, allowing the word God to stand for what is meant by creator or cause of the existence of the universe. Nor does it follow that he who philosophically argues for the eternity of the universe and that all changes therein have their full reasons in the universe itself, is a self derelict from morality, sociality and good citizenship.

Discussion 17. Fetichism is the first step in all religions. It is also the most characteristic feature in all stages of their development, not less, though in undertone in the most advanced than in the first. It is the initiative also of science and philosophy, the universal potency of dawning intelligence seeking a cause. "A fetich is anything to which a magical power is ascribed. Magic is a general name for wonderful effects produced in some mysterious way." Can there be anything more

magical or mysterious than the creation of matter from nothing? "God created the heaven and the earth. God said Let there be light and there was light." All things were made of nothing, says Tertullian. God made all things out of nothing, says Theophilus. Matter is not without beginning, says Tatian. These are Ante-Nicene Fathers. The essence of religion is the emotion of wonder, awe and worship, towards a supposed human-like being, able to do all things, and disposed to punish or reward us for the evil or good we do, excited in us by the mysterious. To the alleged cause there is ascribed competency to the production of anything which our intelligence knows to be or to exist, or our inventive fancy makes needful for us to believe, even the creation of seventy or eighty different kinds of matter out of nothing. God is able to do it; nothing is impossible with God; which assertion is neither self-evident, nor the necessary inference from any known indisputable or verifiable data. What we understand casually and in its working effects, we do not worship nor ascribe to God. The procuring cause of theistic religions is our ignorance and our wants. No satisfactory reason could be given to the intelligence of today for the religious worship of Jesus of Nazareth on account of his great and good humanities. And this was seen in the earliest subapostolic times, and a deific nature was ascribed to him. And to secure this as the leading dogmatic feature actuated all the New Testament writers. And without the dogma of the divinity of Jesus, all he really said and did would have been and would be no more to the world than the life and sayings and martyrdom of Socrates. The vivid and satisfactory feeling essential to identify a cause is the sensuous or intellectual understanding of a definite agency, the means used, *how* turned into effect and perhaps, why, God or Gods which the great majority of the human race individualize, personify and endow with life and power, is or are the preimplications of religious wor-

ship. But they are in the first place impossible of demonstration; nor are they axiomatic verities, or even probable from anything we actually know; and the probability is becoming less the better our scientific acquaintance with nature. All secondary causation it is scientifically and philosophically evident is natural. And the primal and necessary assumption is eternal and uncaused existence. Then the assumption of creation and a creator, or the supernatural, is illegitimate and illogical, and cannot be proven as a fact. We know not and cannot conceive any existence that is not included or can be excluded from nature or the universe; therefore these terms express the primal and necessary postulate or the universal all.

Cicero says: "They who diligently peruse, read or practice over again all the duties relating to the worship of the Gods, are called religious." The only difference between religion and superstition, is an intenser degree of religion. For Cicero further says: "They who pray whole days that their children might survive them, are called superstitious." Religion expresses a psychological state, perhaps of universal extent to the normally constituted human mind, the result of practical life. Suffering, destitution and ungratified desires bring to consciousness our dependence. And our acquaintance with the world informs us that some have what we want, and have not what we desire to be rid of. And these differences suggest to us that the remedies which are not in ourselves are in others. And the means of obtaining both our relief and the bestowment of our desires is by asking a certain inward state and outward conduct, to teach which and to make formal and emphatic, is the profession of some, and is called prayer. Religion as comprehensive of certain psychological states, the absence of certain outward deeds and the doing of others, is not always and everywhere theistic, that is, directed towards an individualized and personal God. It is not

so to the pantheist. Says a distinguished author: "Man knows too little of principles. Man sees the motions of planetary bodies; sees life on earth; sees wonders everywhere and asks: Where does the Power come from which pervades all and moves in all? If a man would examine the *laws* of realities, he would soon find that Matter contains *all Power* as well as *all Forms*. He would soon find that Matter, when centralized or organized, contains form; and when attentuated, contains force. All Matter has these two capacities. The last word of science is that the constant element, the vitality of Matter is force. What science calls force, philosophy calls cause, and religion calls God; and God is potentially and actively present in every atom of matter, every bead of dew, in the pencils of light that paint the spring landscape with inimitable beauty, and the fragrance that exhales from flower and shrub. All Matter has two conditions; one when it is reduced to *form;* the other when attentuated to the evolution of *force.*"

An author, very comprehensive and particular in his learning, remarks that "There is a large world of unprofitable controversy based on the untenable belief that there is an *essential* difference between God-life and the life of Nature. We can discern no substantial reason for such distinction. It is seen that our bodily organs perform certain functions, and metaphysicians, philosophers, and Christians, have attributed these operations to the constant presence of a *physiological law,* which is never regarded *as* divine as a moral principle. Learned men are accustomed to speak lightly and irreverently of *Attraction, Repulsion,* the *Chemical Law, Mechanics,* etc., as though such laws are not the very life, and laws of Deity, as they are. It is not believed that moral laws are inherent and constitutional with matter and mind. There is no difference in the quality of the divine spirit, whether in stones or stars; that the same supernal Mind lives in mechanics as in morals, in body as in soul, in

matter as in mind, differing only and merely in the quantity, extent and degree of its manifestations. It cannot be said in philosophic language, that Nature is the medium for the manifestation of God." This statement implies that there was a time when the physical universe did not exist; that once there was nothing but God; that he called the medium, Nature, out of *nothing* into existence. This doctrine is not taught by anything in the universe. To revert rather disconnectedly, to be sure, with what has immediately gone before to the unsatisfactory regressive tracting of the history of the Old Testament to any definite meaning in which we may reasonably have faith as a real objective divine utterance, as theism teaches, mandatory upon our acceptance under threats of penalties, is consonant with the affirmative development of my theme, the Eternity of Matter. Says the New American Cyclopaedia, first edition, Article Bible: "For a period of not less than 1,000 years, learned men have been engaged in selecting, authenticating and arrange in one volume the constituent portions of the Bible. The history of this undertaking which is the history of the canon of the Old and New Testaments, will be found in its appropriate place. But the labor that has been spent upon this department of study, is as nothing compared with that which has been bestowed upon the correction and establishment of the Scripture text. The Hebrew text of the Old Testament, as we have it, presents these ancient writings after having been passed through many hands, and subjected to many revisions. Of the primitive text, in fact, of its condition previous to the formation of the canon, 175 B. C., there exists little information of a positive kind."

Discussion 18. These writings were really in cipher. "There were no vowel characters; the words were composed of consonants, the vowel sounds being supplied by the usage of the living speech." That is, all meaning had to be put into the writings by the reader before any

could be gotten out of them. The writings expressed nothing definitely. The consonants could be so divided by voice utterance as to make different sense, justifying Professor Huxley in his contention with Hon. W. E. Gladstone, as to the Bible order of creation. "That, if the word in the original Hebrew translated "fowl," should really after all mean "cockroach", he would not be surprised he had great faith in the elasticity of that tongue in the hands of biblical exegets." "Hebrew, with its vowel-less roots, requires vocalization before attaining any meaning." *Century Dictionary.*

The oral teacher was supposed to hold in his memory the meaning of the Old Testament, just as he had received it from his oral teacher without change of word or interpretation, regressively to Moses, or whoever wrote the original, with only the help of consonants, a kind of mnemonics. They had to understand these writings in order to read them; we read our writings in order to understand them. We are at liberty to believe there were no differences in the order in which the consonants were placed in different copies, or vowel sounds which were supplied out of the memory of the reader, among the consonants, no lapses in memory, and no purposed change of words, and this because there was perfect agreement among observers of what had occurred, and among all of what was desired. But we shall find when we come to speak of the Massora, there were vast divergences. To believe there were no purposed or unpurposed changes through all the successive copyists and oral teachers from Moses down to the time the vowel points came into use, which is a matter of non-agreement, covering the time from Ezra who lived in the 5th Century B. C. to the 11th Century A. D., is perhaps a religious need to keep intact the divine revelation. But outside the divine Scriptures, whatever other writings the Hebrews have made, they have not gained even among Christians the universal consensus of being either

critical or honest. Dean Prideaux, D. D., in his "Connections" remarks: "In historical matters, it is not to be regarded what the Jews write, or what they omit concerning them. (the vowel points.) Of all nations in the world, that have pretended to any sort of learning, they have taken the least care to record past transactions, and have done it very bunglingly, and In a manner that looks more like fable than truth." That the Holy Scriptures, the records of a people of whom such a testimony is given by one who accepts said Scriptures as the word of God, a people without a country, although, if we receive their word, a country had been given them by one who owns all countries, with the command to the recipients to exterminate its inhabitants that this favored race might take it and all its improvements, a people so peculiar in thought and conduct as to maintain its ethos millennium after millennium and so obnoxious to every other people as to be driven from the country that would not longer tolerate them, to another that did not welcome them; that the Holy Scriptures, we say, that we have been taught to believe are the very verbiage of God, should come without historical, divine, prophetic, word or alphabetic error, through such a race is of all moral wonders the most wonderful. But theology being not of nature but supernatural, it may be argued that the race-peculiarities of the lineal descendents of Abraham, "the called" and divinely made the father of this race, are good for divine veracity, but not for human, and are strong evidence in favor of their contention and ground for our faith, that they were set apart for the service of theology and religion; that "God's ways are not as our ways, nor his thoughts as our thoughts." It is strange how many proven charges are made against the preserved original integrity of the Old Testament, and against the careless and purposed changes in the text by copyists, and even its entire restitution when lost, and still its character of a divine revelation remains unimpaired.

Eusebius, called the Father of Church history, has recorded that during the seventy years captivity, the Scriptures were destroyed, and that God inspired Esdras the priest, to compose anew all the discourses of the ancient prophets, and to restore to the people the laws given by Moses. The Schaff-Herzog remarks: "Tradition, which is rich in the details of Ezra's life, says that he restored the entire Pentateuch which had been lost, either by memory or special inspiration." In Oort and Hooykaas' Bible for Learners, Vol. I, it is said: "In hundreds of places in the Bible the transcribers of the Hebrew manuscripts have been guilty of the grossest blunders, and it is utterly impossible to make any sense of what they have written. Sometimes the old Jewish scholars have purposely altered the text." We read in "*The Old Testament in the Jewish Church,*" by Prof. W. Robertson Smith, page 106, "From our point of view a book is the property of the author. You may buy a copy of it, but you do not thereby acquire a literary property in the work, or right to tamper with the style and alter the words of the author even to make his sense more distinct. But this idea was too subtle for those times. The man who had bought or copied a book held it to be his own for every purpose. If he could make it more convenient for use by adding a note here, putting in a word there, or incorporating additional matter derived from another source, he had no hesitation in doing so." The author further says on page 8: "Difficulties are not confined to a few corners of the Bible. They run through the whole volume, and force themselves on the attention of every one who desires to understand any book of the Bible as a whole."

Discussion 19. The philosophic view of religions is that they are developments of man's native propensity to seek a cause of himself and all that he distinguishes as not himself. The child's view of everything he beholds is that somebody made it. What is now true of every

child was true of the childhood of the race. And in regard of what we are now writing, childhood is not always outgrown by adding years to life. The child is early taught that God made him and all things, and this is constantly reiterated from the pulpit. And he grows up in the persuasion that God as cause is behind every phenomenon either immediately or remotely. Hence all cause merges in conscious personality, possessed of all power, wisdom and goodness. Then towards these personalities or this personality, through the advocacy of teachers, he begins to be touched with emotions of fear, love and worship. These sentiments together with some external observances, are religion. And I take it that all religions no matter by what name called, whether idolatry, polytheism, monotheism, Brahmanism, Buddhism, Mohammedanism, or Christianity, create emotions alike in kind, and differing in degree agreeable to individual temperament and readiness to become enthused, since it is rare that a devotee of one theology becomes a convert to another radically different. And I may add, it is seldom that a person who escapes embracing any religion during childhood and youth, and becomes a student in natural science ever in adult life becomes a convert to a declared revealed religion. The cast of mind induced by the study of the exact sciences is incompatible with religious faith and sentiments, resting as these do on no verifiable scientific proofs of the religious or supernatural objective. Some scientific men are religious, but they became religious before they were scientific.

The propensity or instinct of man to seek a cause has a scientific as well as religious aspect, in which universal as well as ultimate causation is not viewed as personal. Conscious purposive causation is always secondary, phenomenal and temporary, never primary, creative of substantive or perpetuating of results. The preservation of the Pyramids owes nothing to purposive causation. In the great majority of animate activities no con-

scious intent can be traced. In the whole vegetable kingdom in the building up of complex forms of exquisite beauty, coloring and fragrance, no conscious architect is discoverable. But the doing and the results present the features of intelligence. And the chemistry of its material protoplasmic mechanics has originated the property of life in non-living mineral nature, which becomes the food material of all orders of the animal world. We must accord to nature modes of doing things with mathematical exactness both in the infinitesimal and the celestial fields, independent of conscious purpose. Nevertheless, all nature's operations are intelligible. The little that nature is self-conscious and intelligent, this little is representative of all. All intelligent nature is intelligent along the same lines so far as they extend. We may well believe there is but one fundamental psychic or consciousness, whether animal or human. The most insignificant animal has a psychical experience that the human as human cannot conceive, as truly as the human transcends the merest animal. But reasonably there are differences under one and the same order. Nature is everywhere intelligible, because she is everywhere orderly. Intelligence with definite design as to end and means with power to execute is very limited, in reason not extending beyond the animate, and may well be denied to vegetable life. We cannot accept the theory of hylozoism, nor is it needful to the exposition of nature. The mechanics of gravitation, of motion and of space and time,—eternal and uncreated verities, solve the problem of universal order. Consciousness, as the function or property of certain material inter-relations, awakes to perceive this order and of necessity follows it in all changes it is able to effect. By the operations of the verities or laws of nature undevised and unordained by what we know as mind or executive conscious purpose, since nature or the universe is not the product or outcome of mind or intelligence; for mind is a part and

a small part of phenomenal nature. Observe the symmetry and order of vegetative and animal growth and development, the associated relations of parts, reaching an end of typical form and functional issue as if purposed in final cause and every step directed by intelligence. But no intelligence as a factor in the produced results can be shown to be involved. The intelligibility of nature as a feature incorporated in the universe by an intelligent personality, and there as a mark showing the universe to be manufactured articles arranged into a system by the manufacturer, seems a little surprising in a man of Herschel's philosophic tendency, and of approval by a man of Clerk Maxwell's scientific attainments as we shall see further on. But *how* did the substantive quantity of the universe that makes up all its adjusted and systematized parts, come to be? The foremost educators said, by absolute creation by an infinite, immaterial personality. This verbiage answers the question. But does such an infinite immaterial personality exist, and how came he to exist, and could he and did he, bring into existence out of non-existence the substance of the universe, adjust and systematize its infinite differences to the verities of space and time, having previously caused their validities? Answer: Somebody in the remote past has substantially said so and we believe it,—say our foremost educators. But these answers to the questions are not self-evident, or of necessity must be alleged. Whereas the eternity of existence, and not its creation or creator, is of necessity the primal postulate. On this all else securely grounds. There is an eternal ongoing universe. This we must affirm. Nature as an infinite whole cannot be the product of its part. Nature being the eternal existence which is the primal postulate, or perhaps better expressed as the inevitable conclusion from axiomatic propositions in syllogistic form, viz: Nothing can begin to exist without cause for beginning to exist. Nothing can be its own cause for beginning to

exist. Something does exist. Therefore something exists that did not begin to exist; that is, there must be some eternal existence. The material universe,—the quantitative substance which does not admit of increase or decrease of an atom, and has been declared by the theory,—the observation and experiment of science, to be a quantity conserved forever from loss or gain; and by universal motions is everywhere and always changing, evolving and involving, must be the eternal existence,—the primal postulate and the conclusion of reason. Eternal existence must involve its own laws of existing and changing. They cannot have been imposed upon it from without. The cause of all that begins must in the last analysis, be what did not begin. That which begins to exist cannot be substance which endures from eternity to eternity, without loss or gain, but must be in the nature of function, property or quality. This implies eternal and universal motion as mode of substantive and phenomenal existing. Nature, as the infinite whole both of what did not begin and of what does begin to exist, owes very little of its phenomena to mind, or conscious, wilful purpose. "There is no such thing as free will or voluntary act independent of the totality of the influences which in each individual moment guide men and keep even the strongest within bounds." (*Moleschoott*) To suppose otherwise would be to declare an act uncaused or self-caused. But a conscious purposed act is no more adequately caused than an unpurposed act.

We are not always conscious of forming a will when we act, and not often know all its causes, and are liable to think it is spontaneous or caused wholly in and by the self. Strictly, there is no absolutely free, unconditioned, self-hood, or oneness in action, but that of the infinite entity of the universe. Will in itself and in its action as the personality of which it is a part, is not a disconnected, independent entity, but like every local thing is a part of some larger dependent whole. "Human free-

dom", says Spinoza, "consists of nothing but that men are conscious of their own will, while ignorant of the causes which have induced it." The nature of man and his surroundings determine what he is, does, thinks, and wills. In a given quite extended area, say one of the "States of the Union", in two periods of time each of an equal number of years. Statistics show there has been about the same number of murders, suicides, marriages, births, deaths, accidents, fires, cases of insanity, idiots, males and females born, etc., relative to the population. The rates of life, fire and accident insurance are founded upon the uniformity of such occurrences; showing that things which most nearly concern human welfare, including volitional acts, are not determined by the caprices of freedom that might as well have had things otherwise than they are, but never do. Or in other words, human freedom acts according to the law of antecedent and consequent, like all other events. It seems as if we might have had some things different, when we reflect upon their doing. And doubtless we might. But we should never be free from the necessity of having things as they are. The determining influences which reside in the organism of the individual, consist of physical and moral inclinations and impulses inherited from ancestors, perhaps fortified and provoked into activity by the immediate surroundings. In this stream which is both ourself and not-self, we are carried along with the semblance, but not the reality of freedom. In an important sense we are the continued life of our ancestors and what they have made us. We are tethered to their identity. To be well born in an inheritance not to be estimated in lands, stocks or bonds. It seems little wonder that children should render a kind of worship to ancestors who have given them a strong and healthy physical, moral and intellectual constitution, and enabled them to contend righteously and successfully in a world of antagonisms. Nothing is really free from coercing and conditioning

connections. Therefore nothing is really free. Man is the product of heredity and environment. The self comes of the not-self. Dominant ideas derived from without us, cause and control the exercise of the will within us. This is most clearly manifest in the case of hypnotism, when our volitions seem pitched to their highest degree, but wholly by foreign coercion. Our wills are products of our own agency, our inheritance and our environment, in their formation and exercise. Will can be no more self-caused, or determined by nothing outside the psychic, or the being a part of which the will is, than can be the body or mind. Nor is there rational ground to hold that there is one or many conscious, purposive, self-determined, personality or personalities, will or wills, of, or within, or transcending the domain of nature, that brings or bring about all events in nature Or that there is above or beyond nature, an intelligent agency, called by whatever name, that is the cause of man's existence, or has initiated and determined all or any events that occur in his life. If life was introduced upon our globe or into nature by miraculous agency transcending the capacity and powers of nature, is it not a fair inference that it must be sustained by miracle and not by nature? Nature is one. However much diversified, it cannot transcend its unity; as the law of gravitation declares matter to be many, it declares it to be one also. There is a necessity that determines and secures all human voluntary events no less than the events of physics where no human volition enters, since volition is necessitated. Anything that is adequately and completely caused, and nothing else results in effect, but comes of necessity. Volition, as a mental act realized in a physical act, has its causes in all the circumstances near and remote, in and out of the person willing, which have legitimatized and necessited the result, as truly as a fertilized seed placed and retained in all conditions favorable to its growth, it is necessitated to do so. Can any

thought or act be really free and yet be subject to causation? To confine our attention narrowly to the very act and to acts nearest in time and space to the result, as, for instance, the trigger, and there is no such thing as spontaneity. This, to have the semblance of truth must take in a larger field. As, to make the will or volition free the whole mind and body of the individual must be included. But this larger field brought into the problem negatives the spontaneity or freedom of the act of the will, only by the explicit or implicit affirmation, that the individual is a detached and independent *auto.* The will's act needful to a purposed overt act, the reasons for and against the proposition must pass the criticism of cognition and feeling. And while this deliberation is going on, the will is in a state of contingency or uncertainty. But all contingence or uncertainty stands on no other ground than ignorance. Complete knowledge of all circumstances and their concatenations abolishes all uncertainty as to cause and consequence, and sees all being and all events that are to be in the same certainty and necessity as those that have been. Contingence is never more than a limitation on complete knowledge, and has no more effect upon the real issue than ignorance after the event has transpired of all the causes that have conspired to produce its occurrence. In the abstract reason or deliberation as to means, end, and consequences, might be defined as the objective interrelations among things and events; and reasoning, the perception or calculation of the interrelations. Desire or aversion is likely in some instances to evolve on this perception. We may perceive that our agency is a casual element that will eventuate the occurrence. And there is set up the reasoning or calculation as to all the sequences to react upon the desire and aversion.

Discussion 20. A volition or mental choice, or feeling a preference for this rather than that, when viewed apart as an imminent or indwelling act, may be said to

have its full cause within the person choosing. But as a philosophic question, this is a superficial view. No man is what he is in and of himself alone. He is made, but not self-made. His inmost self as well as his outermost self, is a product of factors not one or all of which was or were himself. In the thought of Clifford: "Reason, intelligence and volition, are properties of a complex which is made up of elements themselves not rational, not intelligent, not conscious." Choice is a complex. So is mind. And so is man. Matter is the eternal foreground of man. There is only one ultimate principle in infinite number and infinite interrelations, and it is matter and not mind. The universe does not owe its existence, or mode of existing or revolving to a self, or an intelligent first cause, or to cause at all. It is itself the uncaused cause of all that is caused, even every intelligent self. The intelligibility of the universe was not made so by an antecedent intelligent personality or self, without whose agency to this special end it would be unintelligible. The Philosophy of the Christian Religion, says, page 29: "Nothing but the work of thought is intelligible to thought. But thought is the most distinctive attribute and exercise of personality; only in a person does it originate, and only by a person can it be understood." Then were the axioms of space made such by an intelligent personality? Are they manufactured articles? And if not made such they would not have been? If a straight line was made to be the shortest distance between two given points, then the intelligent personality that made it to be so, could have made a crooked line to have been the shortest distance. No restrictions or power can be placed upon an assumed Almighty power. And the axiom would have been, a crooked line is the shortest distance between two given points. If not, then why not? Every knowing and feeling personality is infinitely less in every possible aspect than the universe. Does a thought personality give existence and order to the uni-

verse? The intelligibility of the universe as the objective or counterpart of an intelligent selfhood is a necessity beyond the power of intelligence to think, and of intelligent power to make intelligible, were it not so. Intelligence has no power to create itself or the creators of itself. We may see the basis of universal order which nature follows and cannot but follow, whether inanimate, animate or psychic, in the law of exact relation between quantity of substance or matter and space extent, as expressed in universal gravitation,—directly as the mass and indirectly as the square of the distance. The reason of one being becoming another yet retaining its material identity, as some gases uniting in a specific way become water, with all properties and uses, i. e., all relations changed except weight. And water becoming changed in its interrelations in a specific way, becomes gases, with all properties and uses changed. And so it is seen that no becomings, even thought-personality is more than property, quality or function of matter so and so interrelated in space and time orders. That the universe is and must be everywhere and always definitely interrelated in all its parts, forces, productions, destructions, evolutions and changes, is the necessary affirmation of highly developed intelligence. That is, that there is and must be definite order everywhere, is the inevitable deliverance of intelligence. And this is the essence and unity of the intelligibility of the universe, and the intelligent personality, or self, that sees and feels the necessity of it. For mind is the localized consciousness and offspring of universal intelligibility. That there cannot be in space or time, and consequently in their contents of things and events, absolutely *no* order; that is, no intelligibility, seems to me an axiomatic affirmation. It is the privilege and proper scientific business of human intelligence, which in the last tracings of itself finds itself emerging from unintelligent, but by no means from unintelligible nature, to search out the order through

which nature works its wonders, even its own selfhood. It is the definite interrelation of all things that makes the universe of necessity intelligible. Space and time are the elements, source and sanction of intelligibility. These are absolute, eternal, universal, uncaused, objective and therefore subjective, verities, the measure of all things that have a *where,* a *when,* a *form, how much, how many.* Neither the Christian religion nor any other can supply self-evident and inevitable principles for the philosophy of nature. Its fundamental assumption to this end is, Creator of the universe. But this is not a necessary and inevitable postulate as first existence, nor a provable fact. And if admitted it would offer no explanation either of the universe or its creation. An explanation would be a mental seeing and tracing, and an intelligible communication of *how, why, when* and where, the universe that was not, did not exist, came into existence, and is. The creator of existence must transcend and create time and space, for these verities are included in and cannot be separated from the universe. Nor can the universe be any part or property of the creator, for this would not be a creation of existence, but only some change or manifestation of what already existed, and would confound and identify creator with the universe. Any being, personality, spirit, concrete or psychic, alleged to transcend time and space, or is independent of, or the creative cause thereof, may well be pronounced a preposterous utterance. The creator must be something. And if he created space, must be other than space, and where space was not. But space is everywhere, and everywhere is space. Therefore the creator of space can be nowhere. And if nowhere, must be nothing. For everywhere cannot be transcended. And every something must be somewhere. The creation of the universe must have been an event, and therefore at some time. If it should be said, he created it from eternity, *from* usually means out of, or beyond some limits either implied or named in the context, or express-

es derivation, or in consequence of, or on account of something else. To say creation was before or beyond eternity, would mean that eternity had a beginning and a creation, which would be absurd and a self-contradiction; or the creation did not occur, and therefore the universe did not begin to exist, which is the writer's contention. If the creation was a derivation from the creator, or from something else, it was not a true and real creation. Or if *from* means in consequence of, or on account of something else, this is beside the point for which we are contending, and needs no further reply. Creation denotes the beginning of whatever has been declared to have been created, no matter how far back in the past time or eternity the act is put. These expressions denote illimitation of duration, past and future. The allegation of the creation or beginning of time is as idiotic as the creation of space. The supposition of a first event or act (the supposition itself is a barbarism) presupposes time already before the event. There are some propositions that cannot be construed in thought, yet the mind asserts their self-evident and inevitable truth. But the creation of the universal is not one of them. And if honestly declared, behooves to be proven. The allegation of the creation or beginning or ending of time or space, the mind of even little culture disdainfully rejects as an impertinence to common sense. The material universe in its ordered positions and motions bears no marks of having been caused to be by an agency transcending itself. And the allegation of the cause of its beginning to be within and of itself, would be a self-contradiction. Human intelligence, which is nature's recognition of its own being and intelligibility having power to arrange some antecedents, (but man has no power to dictate what consequence shall follow) all within nature and the amplitude of its causal relations, has assumed without warrant, and, indeed against all possibilities, that matter has been caused to exist and to be in ordered positions and

motions by an agency analogous to itself. But human intelligence is as evidently a local phenomenon, begun as is the human body. And neither itself nor its analogue can transcend and be the cause of the infinite universe.

It may be objected that time and space are not included in the meaning of universe; that these verities are not exterior to the mind, but are only subjective, abstract intuitive forms, having no intrinsic objective validity. True, different meanings are put upon the word "universe" by different persons and by the same person on different occasions. The etymology of *universum*, the largest real and possible whole, includes all I intend by the word "universe." I do not include an extrinsic creator in the word, as some writers perhaps do. This is a larger whole than I see reason to advocate.

Discussion 21. Kant says there is one way in which we directly know objects, and this forms the material of all thought. This is intuition. The objects to be intuited must be directly given or presented to the mind. Objects intuitively known are of two classes, viz: those that come to the mind directly through the senses, and those necessarily implied, suggested, or presupposed, in immediately knowing sense objects. Intuition is immediate perception without thought inquiry or reasoning. The mind is directly receptive of the knowledge of objectives; not critically of their parts, or nature, or capacity, or capability of action and reaction, or relationships, but of their general form, color, etc.; and this receptivity in us he calls sensibility. The mind on reflection perceives, not through the senses, but as an intellection, that some truths have unconsciously and of necessity, been assumed in order that our experience should become intelligible to us; and space and time are two of these assumptions. But the intuition of space and time, unless directly pointed out, does not usually come into the foreground of distinct consciousness until near mental maturity. I have known a young man somewhat advanced in geom-

etry, who appeared not to know that he was actually dealing with properties of space in his lines, points, angles, surfaces and solids, and his processes would be true if there were no concrete bodies in space. But it seems not to be needful that these presuppositions should rise above the threshold of clear consciousness, since animals cannot be supposed to have these ideas. Yet they practically solve some architectural problems in geometry. This suggests that intuition of both classes has its origin in intellection in all grades of animal life. That is, the necessary intelligibility of nature whose offspring all life is, must constitute all intelligence of nature, which is only universal intelligibility functioning local intelligence, or self-recognition. This truth, the intelligibility of nature, must be *a priori,* or antecedent to, and independent of, and an element in, all experience both of sense and pure intellection, though it do not rise into the field of consciousness, and must constitute intellection, the senses being only a means to reach it. Space and time are the underlying validities or pre-implications of the concrete and phenomenal universe. Not only of external things but of internal, of consciousness and thought; although this may not be in space direction and distance, or its occupancy. If we can affirm consciousness to be, it must be somewhere. It is inevitably in time relations, and may be relatively more or less intense in degree. In the Critique of Pure Reason, it is maintained that intrinsically space is nothing. It is true space is not a concrete thing. But it is a validity, a truth, a condition, a presupposition of all things, even of the thought and word that declares that space is nothing. Since all things in the widest meaning, including consciousness, in order to be, must be somewhere and everywhere is space. Astronomers, in determining the distance to the sun from the earth, are dealing with space as an objective, intrinsic validity. And so is every one engaged with the problem of distance and direction of one object to an-

other. Neither objects nor consciousness confers being upon space or time. They are eternal truths on whose universal validity rest the intelligibility, and therefore, the necessary relativity of the universe and its possible intelligence. Kant held that space is a pure intuition *a priori* in the soul, the form of all things external already there, and in order that there might be external phenomena to the senses, a subjective state that makes it possible for us to perceive external objects, but not an objective condition to objects themselves. "Space is nothing if we leave out of consideration the condition of a possible experience, and accept it as something on which things by themselves are in any way dependent. Objects by themselves are not known to us at all, and what we call external objects are nothing but representations of our senses, the form of which is space, and the true correlative of which, that is, the thing by itself, is not known, nor can be known by these representations, nor do we care to know about it in our daily experience." As Kant never married he cannot be accused of embracing a mere representation of his senses, the form of which is space, the true correlative of which, that is the real woman herself, he did not know or cared to know. It may well be denied that space has only an internal subjective, and not also a universal objective validity. Sensuous objects intuited or given to sensibility, Kant says, have their space forms *a priori*, or already for them in the soul. And these *a priori* forms are pure intuitions. But the pure intuited forms are no exact representations of the shapes of objects, because their dimensions have to be determined by measurement, calculation and reasoning, as do the space distances and directions of objects from objects. Is the intuited form anything more or other than, the unconscious or conscious necessary preimplication that all objectivity and subjectivity to be must be somewhere, and all somewhere is space? The objectivity of space is as clearly averred and distinguished

from the consciousness of it, as is the objectivity of any objects. Nor are we conscious that the forms of all external objects are *a priori* in us and not really and actually out of us. What is the meaning of intuition? If it be a truth, is it not a correspondence, a coinciding of intelligence with intelligibility, the inward apprehending of the apprehensible? There is here a something taking in or taking on a something having the measurements of its type so to say. If there is no correspondence between the intuition and the thing intuited, what is the validity of the intuition? The validity consists wholly in the correspondence. How came the universal forms of things, the Kantian categories, space and time, *a priori* in the soul? Is the soul a receptacle holding intuitions as something different from itself? Rather is not the soul constituted in part of *a priori* intuitions? Is intuition more an activity, or a passive attitude, an engraving on the psychic surface of the sentient organism, as it were, by intelligibility of its own likeness and nature, and so endows intelligence with the truth of things? Is there any inwardness that does not depend for its being upon outwardness? If the categories, space and time, are intuited universal and necessary forms of all intelligent appreciation of the universe in the soul before experience, how will this be accounted for unless intelligence—the conscious apprehension of nature, be the offspring—the very selfhood of the necessary intelligibility of nature? Intelligibility has functioned or evolved through local mechanico-chemical organizations, the consciousness of itself, analagous to the taking on of properties throughout the realm of chemical unions that do not inhere in their constituents separated, or otherwise united than the specific product known as protoplasm. Intelligibility which is universal and necessary in nature, is evolving the consciousness of itself. Would it not be absurd to say, consciousness has arisen in and of nature, but is not a revelation of the truth of nature, but in some

indeterminable sense is only a representation? Intelligence ranges from its initiation in simple, general, indefinite awareness or diffused feeling, common to the whole organism, to special, definite sense perceptions, in specialized parts of the organism endowed with greatly heightened appreciation of things in their difference and likeness, and intense varied feelings, to intellectual ideation, generalization and logical reasoning deductive and inductive. I have never seen this view advocated or even hinted. It may have occurred to some minds and perhaps been pursued to its overthrow and rejection. But I have worked upon it for years and it seems to me the most reasonably philosophic position. The universe, its philosophy, its intelligibility and intelligence, are all involved in five questions and their answers: the *what;* the *how;* the *why;* the *where* and the *when.* The *what* involves absolute being in its inmost and its outermost; *how* and *why,* are the questions of relativity—of mechanics and mathematics; all becomings find their solution herein; *where* and *when* relate to space and time, in which mechanics and mathematics have their source and sanction. The philosophic exposition of nature in consciousness is the self-revelation of nature itself. Our consciousness must have had an origin, since it has its history of development and growth. Reason cannot have been imported into nature. It is nature's method of self-investigation and of self-announcement. And this means that the very facts and truths opened to consciousness are causal of consciousness. The investigator and the investigated in the last analysis are one. The first has become from the second, and the second ever is. What we think, and why and how we think, the thinker and the thought are wholly by and of nature. The ontological, the innermost and essence of the all, nature is most reluctant to unfold in the consciousness of it. Can nature be known by what transcends the very nature of nature, is absolutely heterogenous thereto, and is there-

in? Automoton is defined in the Encyclopaedia Britannica, as a self-moving machine, or one in which the principle of motion is contained within the machine itself. This definition in its verbiage is somewhat equivocal. Within the machine may not be of the mechanics of the machine. There are those who hold that the causal principle of all material existence, motion, life, consciousness, change and stability, while within matter and the organism is not of matter or the mechanics of the organism. But *deus in machina.*

What may instinct or subconscious acts mean as said of animals and men? The generally accepted view used to be that it is God given directly, or the creature is divinely endowed therewith, which is no explanation, for the mind cannot know there is a divine either transcending or imminent in and not of nature, and cannot trace instinct from the divine into the animal or man. The postulate of the divine is not an exposition of anything whatever, because we cannot know the workings of the divine, nor if there be a divine. The generally accepted meaning now is that instinct is ancestral experience fixed in inheritable structure-form, whose functioning in posterity returns, without conscious purpose, and within the organism, that were causative of the structure-form, while the outward act may or may not be accompanied by consciousness. And this would seem to be the universal method of nature in originating and building our sense organs and organs of consciousness. Prof. Elmer Gates of the Smithsonian Institute, in training dogs for five or six hours each day for five or six months, in one mental faculty, and on examining the brains of these dogs and comparing them with the brains of dogs of the same litter not so trained, found a far greater number of brain-cells in the trained faculty areas, than in the same faculty areas of dogs not so trained. This proves that the brain is susceptible of growth and discriminating power by di-

rected and continued exercise. This implies that there is nascent power of discernment in undifferentiated living protoplasm. Spencer views instinct as "compound reflex action." And reflex action is the origin of all degrees of consciousness and is co-ordinate with the emergence of life from the non-living. Indeed, its parallel might be claimed in the pure physical, as reaction is necessarily consequent upon action.

"Under its simplest form," says Spencer, "reflex action is the sequence of a single contraction upon a single irritation. A vague manifestation of this sequence marks the dawn of sensitive life." It is seen in living protoplasm where there are no specialized structures as nerves and muscles through which it acts, but the whole vitalized mass is both irritable and contractile. But the evolution of the living mass produces special forms of tissues for receptive and reflexive activities. The impress of the external world in its differences upon the local complex of physics and chemistry, which itself has been formed in nature's laboratory as the embryo instrumentality for nature's self-appreciation, there is co-ordinate with the formation of this physico-chemical complex a new order of being-life, simple awareness or nascent feeling, a unit imminent in all the living mass. This universal seat and condition of life and all degrees of consciousness and volitional action is known as protoplasm. There seems to the writer good reason to hold that the property of life and consciousness arises after the analogy of properties of chemical compounds which are not intrinsic in the separate constituents. Nascent feeling is the beginning of individuality and experience, which in its reflex influence upon the recipient organism originates special forms of tissue which differentiate, intensify and localize, different feelings which correspond to different presented aspects of nature. The forms of the tissues and their appropriate feelings being inheritable by posterity there results a growing completeness of

recognition of the cosmos of these special local forms of the cosmos. And this recognition is alone the subject or self, as distinguished from the object or not-self. It does not seem to me impossible or even improbable; indeed, so far as I can see, or better perhaps, so far as I cannot see, acidity can no more arise from the chemical union of non-acid sulphur and non-acid oxygen, than life from the non-living chemical elements that unite to form living protoplasm. And all the reasons that warrant me to affirm (which are not a seeing *how*) that acidity *.does* arise from non-acid constituents, and must therefore in reason be caused by their interrelations of positions and motions, together with an unknown adaptive nature to this result of these constituents and contributions to the result by the environment. So we have similar and as weighty reasons to affirm that life and consciousness do arise from a far more intricate chemical complex called protoplasm. There are many different kinds of acids, and acidity of different qualities are co-ordinate with chemical unions of other non-acid constituents, while no life or consciousness is known to be co-ordinate with but one definite chemical combination of substantially the same kinds of matter. Or if there be a difference the protoplasm that functionates human life and consciousness contains more elements, and consequently the intricacy of their interrelations is more complex. And as the substantial unity of this one complexus is the seat of, and contains the processes of all life and mind, it seems to me to present all the certainty of a causal relation of antecedent and consequent between a definite local chemistry and consciousness, as is presented by another definite local chemistry and acidity. True, we cannot trace the causal nexus between chemical organization and the physiogenesis of life-function, from bare indefinite, diffused, awareness, to definite, intense, local feeling, logical thought-building and philosophical judgment, as we can trace the causal relation between the mechanics of

the watch and its time-keeping property, or intelligently follow, step by step, the necessary relations between the given data of a mathematical problem and its solution. *How* life and consciousness are the functionates of a material organization nature may never reveal to consciousness. But that consciousness is co-ordinate with, or has simultaneous effect upon, causal relation to chemical organization, we have all the evidence that comes to us that other properties arise from other chemical organizations, viz: that mental properties are never known except in such organizations, and when the organization is dissolved the mentation ceases, as when other chemical organizations are dissolved, other properties are extinct. Nor does there seem a greater warrant to interpolate a knowing and feeling entity separate and independent from the chemical organization to account for consciousness, than an acid entity separate from and independent of other chemical organizations to account for acidity. For we can no more find acidity separate from the combination whose property it is, than we can find consciousness separate from the combination whose property it is. Consciousness is very specialized and dependent upon substantially one chemical combination, while there are many acids differing in their qualities determined by differences in the chemical combinations. Therefore the evidence seems to be stronger for the alone complete causal relation between chemical combination and consciousness, than chemical combination and other inherent properties. Isomerism and allotropism greatly strengthen this judgment. For combinations of the elements in the same proportions may have very different properties. And the same element may have very different properties, as carbon may be diamond, or charcoal, or graphite. And this may be explained by differences in which the components of atoms are arranged among themselves. Consciousness has its known functioning organs and place in organism, and may be increased in power by ex-

ercise, as muscular contraction has its, and may be increased in power by exercise.

Discussion 22. The *why* of organization and of chemical affinities and the resultant properties of their unions whether termed physical or psychical are no less inscrutable enigmas than universal gravitation, in the present state of science. One thing is evident—processes involving definite positions of matter in motions in definite directions, velocities and amplitude of projection, produce products widely different in their nature, from what undergoes the processes. It may be held with all the reason that warrants any inference from given premises, that psychic phenomena result from the same fundamental premises of matter in definite related forms and motions, that warrant us to hold that physical phenomena so result. There is no scientific evidence of their being anything or need be anything transcendent in the former phenomena more than in the latter. There is only this antagonizing dogmatic assertion: "Matter and motions under no physical conditions whatever, can be causal of consciousness." Nevertheless, all the evidence we have shows nature alone to be as competent for the one result as for the other. It is as evident that what enters into and becomes our body, as food and otherwise, brings forth consciousness, thought and feeling, as that the product is muscular contraction and various secretions and excretions. What feeds and sustains life in all its manifestations must suffice for its origin.

Principal Fairbairn says: "The transcendental cannot be excluded from our view of the universe. But the transcendental in philosophy is the correlate of the supernatural in religion." Yes, *Deus in machina*, has decended from the childhood of the race as the ready and generally accepted solution of all mysteries. And the Christian religion, heir to the Semitic, as an unscientific and unphilosophical philosophy, has accepted the solution and is propogating it in all lands, and the child's

answer to mysteries is "God does it." But it explains nothing, and is only the substitution of a greater for a less mystery. No solution is reached thereby, for our intelligence is not informed. Solution of a problem is effected only when the mind sees that the reasoning through which thought passes must of necessity reach the true solution. If the author only mean that the transcendental could not be excluded from *his* view of the universe, I shall not call in question the statement. But there would have been no point in expressing such a view. He must have meant that whenever any one avers the existence of the universe, by necessary pre-implication, a transcendent is averred as its creator, as when an event is averred to have occurred, there is the necessary pre-implication of a somewhere and a sometime, though these conditions may not be stated. But such implication is simply not true. For the existence of the universe carries with it no necessary implication of its creation or a creator of it. He says: "To affirm the transcendence of thought is to affirm the priority of spirit, for spirit is thought made concrete—translated, as it were, into a personal and creative energy; it is mind as opposed to matter, a known as distinguished from an unknown, conceived as cause of all dependent being." The being he declares transcends the universe, certainly transcends thought and the need of his affirmation, and is a mere gratuitous assumption. For unless the universe is known to have been created, or there is an obvious or probable state of things which implies or necessitates the averment of its creation, there is no warrant for the allegation of a creator. And surely it cannot be proven by ever so much averment which is alone the theological and religious proof. The claim is only an animistic survival, much developed and enlarged, a religious dogma, warranted by no proof of the creation of a single atom of matter, or the need of its affirmation. For the primal affirmation is eternal and uncreated ex-

istence, and not the creation or creator of existence. The universe, a word which sums the universal real and possible all, now and ever the all would not have been all by an infinite margin before the creation of the universe of matter, force, space and time. Creator and creation are survivals from the ages when men had no conception of the impossible, the self-evident, the need of proof beyond assertion, and Gods were as common as sticks and stones; had the merest experience, and no intellectual view of the infinite extent and content of the universe, and saw no difficulty in the creation of matter, and took what comes into and goes out of sensuous appearance, as beginning and ceasing to exist. This idiotic relic is dressed up and disguised in modern philosophic language, indefinite as to exact meaning, and beyond the willing criticism of persons who will be likely to read the passage quoted. "It is the philosophy of the Christian Religion"—well named. But it is not the philosophy of nature. This transcendental in philosophy he may well say is the correllate of the supernatural in religion. Nature cannot be transcended, nor is there a supernatural. The infinitude of nature bars all existential and thought-meaning from those words. Should the child's question be asked: Who made the universe? the reply is: it was not made. Uncaused and eternal existence must of necessity be the postulate of reason and even of religion, when the latter has passed the infantile stage. The postulate must be an existence known through actual experience, and not a fabulous existence. A monotheistic God as creator of the material universe is as fabulous as polytheistic Gods claimed to have accomplished the same achievement. It is impossible to conceive an act creating matter, or an existence performing the creation of matter. And as such an act or such an existence is not a necessary affirmation, or an unavoidable implication of what cannot be denied, what enforces or justifies the affirmation? In-

conceivability is not a negation of the truth of what necessitates an affirmation; as the illimitation of space and the eternity of existence are inconceivable, yet we are under the necessity of their averment. The words "creation of matter and creator of matter" convey no intelligible meaning, nor are they necessary averments. The inconceivability of its negation is not always a test of the truth of the existence of what is affirmed, as the limitation of space and the creation of matter are as inconceivable as their contradictories. There is no other supposition possible. Space must be either limited or not limited. While both terms are equally inconceivable they are not equally incredible. To claim that space is as likely to be limited as not limited, because each alternative is inconceivable, or that each stands before the light of reason on equal grounds of acceptance or rejection is either absurd to the asserter or his reason is defective. The averment that space is without limits is inevitable. And the denial of its limitations is equally inevitable. The creation and non-creation of matter, are each inconceivable, but not each equally incredible, since eternal and uncreated existence is an unavoidable conviction, and matter is the only existence that bears the incontestable marks and stands the test of experience and of theory of being ever a persistent quantity. It stands therefore before the reason and the scientific induction of the persistence of matter, as the eternal and uncreated existence that must be primarily postulated. Neither physical growth nor age always outgrows the state of mental childhood. Childishness thinks everything must be made, or put into the form it bears and made to do what it does by somebody. And having no conception of the universe and none of the creation of matter, but some of the world he lives in, he asks: Who made the world? The parent or reliigous teacher, moving on an uncriticised religious plane, answers, "God made it." And having none but a religious philosophy, this answer becomes

the dogma that solves every problem of his life. And the Christian devotee speaks approvingly of the "simplicity of this childish faith."

It is the animism that has come down from remote ages, and we pay ministers to teach this doctrine in our own, and send missionaries to carry it to foreign lands. So probably I may be greeted with this question put in the positive form: Then you do not believe in God? Not in any that I can put into thought with the persuasion that what I think is the veritable creator of the universe, in which and of which we live and all things living and not living, move and have their being. The creation of and putting into motion and interrelating the infinite material, space and time universe, is a job that no amount of declamation or number of believers in, can make true and real. Such an existence is impossible to be realized in imagination, and is not imposed upon reason as an *a priori* truth, nor of possible proof. God or Gods have been of almost universal assumption among men. And those who, by themselves, claim to be the most learned and civilized have repudiated polytheism as a relic of ignorance and barbarism, and as never having had any ground of fact or reason to rest upon. But the same assumptions that are held to be needful to ground monotheism, grounded polytheism, *viz*: the creation and operation of matter and phenomena. But whether the present scientific attitude towards the functions of living existence, *viz*: the division of labor into specialized agencies to secure greater perfection of operative results is not more consonant with the supposition of many Gods than of one, might be debated. The assumption of an existence separate and apart from all the existence of our experience, of our possible conception, and the ascription to it of personality and eternity of existence, and creative cause of the existence of the universe, and every detail of its operations; it is much simpler and just as satisfactory to reason, to ascribe eternity to the universe

and self-operating power with all its marks of purposive design and order. Eternity of existence and self-activity must be posited somewhere, and this had better be the existence and activity that cannot be denied existence, than an existence of which it is impossible to obtain any satisfactory evidence either that it is, or that it did create or could have created and effected the infinite distribution of matter, as it were, as small an achievement in execution as our saying: "God could have created the universe, because he has almighty power." We seem not to know or forget that all the evidence we have of such an existence or of creative agency, is that somebody in an unidentified past time presented the substance of this theologico-religious dogma as the explanation of things. And it has been repeated with modifications ever since, without adding any evidence of its truth, such as is relied upon by informed and critical minds to prove other propositions. It is impossible there should be any evidence to prove the creation of the universe. The evidence that was all sufficient to prove creation and a creator of the universe and anything else, until intelligence had outgrown easy faith and had learned that all phenomena occur according to laws of nature, that is, according to positional and motive interrelations of matter and force, and not according to the will of imaginary Gods many or one, was what never could be proven true, divinely inspired speech and writings, and miraculous deeds. These capricious prodigies become obsolete when it is seen that they are inconsistent with a broader and deeper view of nature as the all encompassing and all performing existence in her own eternal right and power. To enhance the view of nature is to depreciate the view of the Gods. Theology is the superstition of childhood retained and worked upon by more intelligence to realize the child's faith in thaumaturgy,—the bringing of something out of nothing, and the doing of something without a known doer. The type is always reproduced in the

offspring. If morality or ethics in its broadest and deepest meaning relates to conduct, and conduct signifies action, desire, purpose and power to promote the well being of animal existence, and this appertains especially on the part of man towards his own species and inferior species of animals, and this principle holds good on the part of a supreme being who has created man, (and why should it not?) it cannot be shown to hold good practically on the part of the being said to have created, and who actuates and controls nature. It cannot be maintained that the forces of nature are so governed and controlled as always to promote the well being of mankind. Is there a moral implication in human reason and conscience on the creator of nature and human life to promote by means commensurate with the creator's power, human well being? It is likely this question may be answered by some in the negative, and the reason of a negative answer is obvious. It is plainly seen that it is not so used. There is entire absence of evidence that the destructive elements of nature are ever controlled in the interests of human well being, if life, health and happiness are regarded as his well being. And to maintain what is conspicuously true against the universal father and the universal good is a virtual denial of such existence. Cyclones, tidal waves, earthquakes and volcanic eruptions unhindered and without warning, destroy untold thousands of human beings. Cities, theaters and other buildings full of people are burned; vessels go down at sea with their freight of human beings; black death and other epidemics decimate countries; wars sacrifice millions of lives and cripple and deform as many more; famines from unfavorable weather for the growth and maturing of crops, devastate provinces of their populations; murders, thefts and robberies are hourly occurring; religious wars, massacres and persecutions take place because the one true religion is not universally known, and always as expressive of the believed will of

God that it should be so, and TeDeums are sung to the praise of the equal father of all by the successful party of a great battle, that he has given the victory. And Dr. Sprenger in his Life of Mohammed computes the number of persons who were burned as witches during the Christian epoch as *nine millions*. Witches were those who had made a compact with the Devil as against the authority of God. All this catalogue of horrors, and it might be indefinitely increased, has occurred and is occurring, and no Almighty power or fatherly love, controls the elements or forewarns the people, or informs them which one of the many religions is the true one, or that all are equally acceptable upon the pretension of divine revelation guaranteed by miracle. But there is no evidence of a divine providence of power and love that protects individuals or peoples, or forewarns them of disasters that might be avoided. Human life seems no dearer to its creator than vegetative life, nor persons protected from pain and sorrow, than change of position of inanimate things, and individuals from sweeping destructions than the most insignificant insects, for both alike are freely sacrificed while the species of each is equally preserved. Is it not more consistent to deny the existence, or at least hold in suspense the judgment, of a being of creative and Almighty power and of infinite love, against whose moral character such a catalogue of permitted calamities, and sanctioned by silence, religious wars and massacres perpetrated on the ground of defending his own self-revealed existence, character and will, without correction individually as universal as the race, and self-evident, should be chargeable with no successful showing of their fallacy? Nature's demand for marriage, followed by the agonies of motherhood as if the one end of human life to be secured is to continue the species, no matter what consequences may come to the individual; the birth of offspring with defective bodies and imbecile minds without the capacity of seeing, hear-

ing, or of speech, with organic insanities and birth-tendencies to crime and inebriety; contagious diseases with no power to detect the poison or knowledge to avoid its impress upon us, and early death of a majority born; the anguish of forever parting from the loved objects for whose advent into life there has been so much suffering, their removal seems a mockery of the nature which demands offspring, and does not point to a creator of Almighty power and infinite goodness and love. All this is seen to be true without a voice of denial. And so men frame systems of excuses in justification of the being and his doing which their fancy has created and endowed with Almighty power and infinite love and compassion for the human race which he has brought into existence "for his own glory," and go about giving consolation and assuring agonizing grief that juvenile death is evidence as manifest and quite as assuring of God's love, as birth which has satisfied the nature which he has implanted in mankind. But in this respect the whole animal world might urge the same condemnation and should be entitled to the same consolation. Behold the manifest sorrow of our dear domestic animals bereft of their young. I mourn with them as sensibly, if not as acutely, as with the human mother whose dead offspring lies in her bosom. We all are of one kith and kin in origin and most likely in destiny.

Discussion 23. But this defense is put forth as his revelation of self-justification and charging the suffering victims with the procuring of their own misfortunes and death by going out of their natures and the influence of their surroundings, neither of which could man have been the author of nor have prevented the activities of the latter. And man has devised a remedy and detailed its origin, workings, and effects both upon his race and upon his God, for Gods one and all are man-made, and charging all the dire calamities upon the first man whom he had made in his own image, and the first woman, and

by inheritance had continued in all their issue which is the entire race of man. The remedy works no prevention of external calamities through the controlled violence of nature's forces, or of disease, or death, or internal human tendencies to wrong doing, but is curative of all bad effects that have been wrought not here and now in this life, but promises complete cure in a future life which the remedy also promises, but exacts faith on the naked ground of the promise as the only condition on which any benefit can be received therefrom, and threatens eternal punishment for the failure of faith. But the unfitness, partiality and mysterious extravagance of the remedy, plainly discovers its human origin. Of all the stupid dogmas imposed by theology on its devotees, none seem more idiotic to common experience and observation, than that the world is under the restraints of moral law; that it is governed by an Almighty father, who pities and succors his children. The creator of the universe is anthropomorphic in form, disposition, acts, methods and failure of constant good results. The remedial appliance is effected through a God-begotten Son after human methods upon the person of a human virgin. "The Holy Ghost shall come upon thee, and the power of the Highest shall overshadow thee, wherefore that holy thing which shall be born of thee shall be called the Son of God." Besides the unequivocal statement of begetting, the consequential birth is stated to have occurred nine months after. But as the need of the remedy is a mystery of human fancy, so is the remedy in its origin, in its working and its results. It seems the most astounding absurdity, amply sufficient in reason and common sense, to defeat the entire Christian theology, by which every other theology is defeated, that the being claimed by the Christian scheme to be the creator of the universe, omnipresent, omniscient and omnipotent, should have a begotten son after human methods, partaking of his own divine nature and attributes and also of human nature and at-

tributes, though without commingling of these essentially heterogeneous natures. But the entire divine nature and the entire human constitutes the son. Then this is proposed for religious faith which requires no evidence but the divine *ipse dixit* for which there is no evidence except human testimony called divine inspiration.

Neither fetichism nor polytheism, with their worship of inanimate and animal objects and the birth and genealogy of Gods as the Greeks held, from which monotheism and European and American theologies and religions are true lineal and legitimate descendents, present greater absurdities. "The greater part of mankind have united to ackuowledge that which is most probable, and which we all are by nature led to suppose, namely, that there are Gods. Protagoras doubted whether there were any. Diagoras the Melian and Theodorus of Cyrene entirely believed there were no such things. * * And since opinions are so various and repugnant to one another, it is possible that none of them may be, and absolutely impossible that more than one should be right. The Pythagoreans, when they affirmed anything in disputation and were asked why it was so, used to give this answer: "He himself has said so," meaning Pythagoras. But the force of reason in disputations on Christian theology and religion, the final and satisfactory answer to all questions is: "God has said so." And if still pressed by the question, how it is known that God has said so, the reply is, it is so written in his book, the Bible. And this book is what holy men of old spake as they were moved by the Holy Ghost. But the proof of these allegations does not rest on necessary presuppositions, reason, nor experimental verification,—simply on authority; somebody, in remote antiquity, nobody knows who, has said so. The last expression may be taken as true, for there is probably not one statement deemed essential or important to the Christian system that had not been announced, or had not been claimed to have been wrought previous

to the birth of Jesus of Nazareth, in regard to some older religion. And perhaps also true of Hebraism and Judaism. Nor according to late research is the origin of this people so remote in antiquity as has been generally supposed. Prof. Gunkel, in his Legends of Genesis, says: "Between the primitive races of southwestern Asia and the appearance of the people of Israel upon the stage of life, had rolled unnumbered millenniums, hence there is no room for serious discussion over historical traditions said to be possessed by Israel regarding those primitive times. In former times, before the deciphering of hieroglyphs and cuneiform writings, it was possible for Israelitic translation to be regarded as so old that it did not seem absurd to look to it for such reminiscences of prehistoric ages; but now we see that the people of Israel is one of the youngest in the group to which it belongs; there is an end of all conjecture." The author just quoted seems to confuse differences and sometimes to identify them, and sometimes to be inexact in his definitions. Legend he says, is originally oral tradition. And legends are not lies, he says. To be sure lies may be defined somewhat equivocally. It may be a lie as to the true historicity of the event declared, but true in the consciousness of the narrator. Tradition is what is handed down by word of mouth, and if it purport to be historical fact, may be as true as that which comes in writings. For the false as well as the true may be committed to writing. And the false is not made true by writing it. Shall this be the algebraic expression. Legend equal Tradition? Tradition kept alive by one generation orally repeating its happenings to the next after is believed to retain a soul of truth, and may, once witnessed to by the senses, but now overgrown and undergirded with error by not being at first committed to a permanent form of record. Is the creation of the world; the formation of man from dust; and the giving life to that form by God breathing into his nostrils; the forming of woman from a rib taken

from the man; what God said on the various creations; that the spirit of God moved upon the waters; that the Lord repented that he had made man on the unexpected disbehavior of man; that God said let there be light, and let us make man; and what God said about going down to confound the language, legend? oral tradition and may therefore have a particle of objective truth? Was it once partly true that serpents and she asses used to speak, and angels and women had carnal connection, and God walked about in an earthly garden observed of man? If these statements are legends, then legends do lie, for there cannot be a shadow of truth in these idiotic allegations. They are naked lies as to their objectivity.

The Christian world takes these legends for demonstrated objective truths, and events that have occurred with all the actuality and certainty that characterize the changes of the seasons. In these and their like which make up the Christian's sacred books, are to be found the evidences of the divine existence, the creation of all things, man's origin and destiny, his religious duty, the grounds of his future life and what is to happen to him then. The stories of all the Gods of every nation and people are myths. "Stories of the Gods are in all nations the oldest narratives." And Hesiod is as likely to be a faithful historian as Moses, the prophets, or any of the New Testament actors or writers. Our theology is but a mythology like the theologies of the Orient. They are only legends in which the actors and speakers are the Gods of story-tellers. Jehovah is simply the God of the Hebrews as is Zeus of the Greeks, and Jupiter of the Romans. "Many myths attempt to answer questions and intend to give instruction." This is the case of many of the legends of Genesis. The stories of the Patriarchs are legends, not individual and family histories. Patriarchal names are names of tribes. The legends of the Bible are variously classified, as ætiological, with the view to explain something. The question,

Whence came heaven and earth, would be likely to arise, as it does now. The explanatory story of the creation is the answer. So of the origin of man and woman, animals and the vegetative kingdom, the rise of nations, the cause of death, the desire for continuous life and so on. Legends are the answers of early attempts to find a cause. And this natural propensity alike moves towards science and philosophy. But theology and religion are neither science nor philosophy. They do not found in objective fact or reason. They are the continued story-telling of the moderns based upon the fictions of the ancients, and to future generations will be myths and legends. Their warp and woof are curiosity and emotion, prompted by the universal characteristic of human intelligence and feeling, to seek after a cause. How many unconscious legends and myths we all daily tell and receive for truth and fact through our easy faith. And none tell more than preachers in their preaching and devotees in their hearing. The dogmas of the New Testament find their theological and religious standing on the fictions of the Old. The creation of the world, the formation and fall of man, the introduction into the world of sin and consequent death from the slight disobedience of eating the fruit of the tree of knowledge of good and evil, especially as the fruit was good for food, was pleasant to the eyes and desired to make one wise. Pity there had not been a line of enterprising horticulturists who should have brought the descendents of the tree down the ages, that by eating its pleasant fruit one should become wise, it being an attainment so difficult and expensive in time and money to acquire through our schools and travel. The wild prophetic rhapsodies of thought and speech—" A virgin shall conceive and bear a son. He shall be called Immanuel, the Mighty God, the Everlasting Father. Of the increase of his government there shall be no end upon the throne of David." This wild burst of senseless enthusiasm infolds essential dogmas

in the mythics of our theology and religion which has had dominance for millenniums the definition and defense of which has engaged the world's councils, emperors and kings, and provoked wars and massacres, and to this day these fictitious stories of sacred literature are held by millions to contain the only ground of hope for man's future life and well being, and his happiness and satisfaction here and now. There had been a previous announcement by one of those diviners of future events made to David and Solomon, that David's throne, in the line of his descendants should be established forever. This prophecy proved abortive in David's grandson. And the complete political sovereignty was wrested from the Jews before the birth of Jesus Christ. This was a severe shock to a people who flattered themselves that they were special favorites of Almighty God, who had called forth from a distant land the progenitor of their nation, and favored him with personal interviews and conversations; and had promised great gifts to his posterity, when as yet he had none, and had given him posterity (to make good the promise) beyond the term of nature's ordinary capacity, although a future mariage brought him six lusty sons, perhaps as many daughters. But daughters with a barbarous people are of so little consequence as generally not to merit a record. God had also promised the land of the Canaanites to Abraham's posterity. And after centuries of waiting and after the descendants of Abraham had become a numerous people as slaves in Egypt, God led them out triumphantly as against the whole military force of Egypt, fed, watered and clothed them forty years in making a journey that in nearest route might have been accomplished in eleven or twelve days; gave them a jurisprudence, ordered their occupancy of Canaan, generalized their wars for conquest and gave them two days without an intervening night, for the greater slaughter of those who were defending their homes; their possessions, their wives and

children; ordered the extermination of the population, and divided the land and its improvements among the Hebrews. But all this tale of Israelitish sojourn in Egypt for four hundred years and their Exodus therefrom under the awful circumstances related in the Book of Exodus is unworthy of belief, for the record shows upon its face its mythical character. And critical intelligence of to-day has rejected all marvels much less in degree of absurdity as contained in other sacred literatures as fictitious. And there is no way of rescuing these Hebrew prodigies from the class of invented stories as groundless of historical fact as any other romances. They are uncorroborated by any reference to them, or the life and growth of the Hebrew people in Egypt in any records as yet found there, or to any incidental mention of their sojourn there, or to their departure from Egypt in the midst of such striking physical phenomena, by any other people having relations with Egypt. Hastings Bible Dictionary says: "The work of excavation of lost cities and monuments has gone far to negative certain hypotheses as to the Exodus, if not to render them impossible. The decipherment of inscriptions and papyri belonging to the time of the Exodus has furnished us with geographical and historical annotations of the highest value. It must not be supposed that the result is an unmixed confirmation of the biblical account. A recent decipherment of an Egyptian inscription shows that the Bene-Israel were already in Palestine at the time of the Exodus." But all these romantic stories invented by a people whose early history like that of other peoples of remote antiquity not being fixed in permanent form, being lost, show that they sought, like other races to account for their history and for themselves through miraculous interposition of God or the Gods. And these tales and their similitudes in the Jewish writings have served as proof of the objective existence of the Hebrew tribal God, and been accepted by Europe and the West-

ern continent to be the one universal and only God, with the indefinable, self-contradictory definition, *viz*: "1st, There is but one God and this God is one; i. e., indivisible. 2nd, That the one indivisible divine essence as a whole, exists eternally as Father and as Son, and as Holy Ghost; that each person possesses the whole essence and is constituted a distinct person by certain incommunicable properties not common to him and the others." *Outlines of Theology by A. A. Hodge, page 132.* It will be observed that the one indivisible God is entire in each of three distinctive personalities, and this is true eternally; that is, regressively without beginning, and progressively without termination. Theology talks of eternal generation, as if what one term affirmed, the other did not deny, of God the Son by God the Father, and a mundane begetting of God the Son on the person of a virgin by God the Holy Ghost, who is the same one and entire God as the Father and the Son. And grave Doctors of Divinity see nothing grotesque or objectively impossible in this romance, because found in their inherited theological and religious authority. If they had been born of Mohammedan parents and raised in a Mohammedan country, the Koran would have been their religious authority. And so as becoming Brahmans or Buddhists. And those unnatural tales would have been to them as impossible of belief, as historically true as they are to devotees of other theistic religions. If one says: they are historically false but theistically and religiously true, to be apprehended and held by faith, they do not belong to the field of nature, but to the supernatural. We will leave this statement before the jury of thought without comment. Nor does the number of advocates of any so-called supernatural religion increase the evidence of its supernatural origin or agency. For the supernatural is not susceptible of verification by experimentation or calculation.

Discussion 24. Whoever maintains that the great

number of advocates of his religion is evidence of its supernatural origin and extension, must find a reason for the extension of other religions nearly or quite as numerous in adherents as his own. If those that are opposed to his have succeeded in obtaining so large a following without a divine causation, the critical mind, and without prejudice, might say, if these religions have so greatly prospered as to adherents and the long time they have continued to satisfy successive generations, these evidences would show, if they have any evidencing value on the proof in issue, that these with your religion are alike supernatural, or yours and theirs are alike destitute of the supernatural element. Either horn of the dilemma would prove an ouster of a supernatural religion. Would any intelligent and unprejudiced mind say that there was a supernatural curative relation between a diseased person holding in his hand a bone of a dead saint, or a piece of the cross on which Jesus of Nazareth was crucified, and the cure of the disease? I should be prepared to expect the first reply would be, the bone of the body of a dead sinner, and a relic of the cross on which either of the thieves was crucified would be just as efficacious, provided the patient believed they were the bone of the body of the dead saint and relic of the cross which sustained the dying Jesus. Then it may be admitted that recoveries have followed these prescriptions. Then it was faith that cured (there have been many faith cures) a direct mental and indirect physiological and hence curative effect, and not a supernatural or a divine touch. And this leads me to say that whenever any result may be credited to belief in a definite objective speculative cause, the *faith* is just as efficacious if there be no such operative cause. "Thy *faith* hath made thee whole." Jesus was carried away with this power of *faith,* when he said, (if he ever said it, and not because some unknown person has put it into his mouth, need we believe it of him): "What things soever ye desire, when ye pray, be-

lieve that ye receive them, and ye shall have them." And this explains the satisfaction which every form of religion gives its devotees; and equally so all the virtues and crimes of all religions. If faith and fulfillment guaranteed by belief, be the proof of one theology and religion, it must be the proof of all theologies and religions which rest upon the same claim, under the same guaranty. Our grave Doctors of Divinity are provoked to smile and to the expression of surprise that the learned Greeks could have been so fool-fangled as to have accepted for true the absurd stories told in the Theogeny of Hesoid of the origin of the world and the birth of the Gods; or the Greeks and Romans taking the will of the Gods by augurs, hieroscopy and a hundred other modes of divination. It may be said in truth that there is no greater absurdity told by Hesiod concerning the birth of the Grecian Gods, than the orthodox Christian theology maintains as to the birth of its God; nor the objects of heathen worship, than the objects of Christian worship, as Mary the mother of Jesus, and images, or of heathen means of curing the sick, than of Christian shrine or relic cure. In the eighth and ninth centuries "Throughout Christendom the practice of medicine was altogether supernatural. It was in the hands of ecclesiastics and saint-relics, shrine and miracle-cures were a source of boundless profit to the Church." *Draper's Intellectual Development of Europe.*

I am by no means sure that miracle is not the legitimate and authorized Christian cure of disease and procurer of all our needs. It was the means used by Jesus and he endowed his disciples with the same power and sent them out to exercise it. And on their return they report to him its successful exercise. His words are proof that it is legitimate and an important feature in whatever he purposed to effect. He authorized, invested with its power, and sanctioned, miracle cure, without definitely prescribing the external form of its adminis-

tration. "All power is given unto me in heaven and in earth." "He that believeth on me the works that I do, shall he do, and greater works than these shall he do, because I go to my Father." He healed the sick, raised the dead, cast out devils and cured leprosy. Believers in him were not to be hurt by serpents, or by drinking deadly poisons. They were to lay hands on the sick and recovery was to follow as a consequence. He created bread and fish, prepared and cooked for food; and killed a live fig tree by his vocal power. And declared to his disciples: "If ye have faith as a grain of mustard seed, ye shall say unto this mountain, Remove hence to yonder place; and it shall remove and nothing shall be impossible unto you." This range of subjects extends over much of animate and inanimate nature, and he proved by illustrative examples the truth of his declarations. And here is the extent of the application of effective faith as just said: "What things soever ye desire, when ye pray, believe ye receive them and ye shall have them." "All things are possible to him that believeth." It appears from the above quotations and others that might be cited, that Jesus intended the kingdom of heaven which he purposed to set up, should be administered entirely by miracle. That all physical wants of food and clothing, as in the journey through the wilderness; the curing of diseases, as he was constantly doing, and sometimes his apostles; the supply of birth defects, as the giving of sight to the born blind; and restoring of limbs to congenital cripples; the immediate restoration and healing of the ear of the servant of the high priest cut off by a sword in the hand of Peter; the removal of physical objects, as declared of the mountain and the sycamore tree; and whatever else should be needed for the welfare of the subjects of his kingdom, should be obtained, not by physical effort or through secular or mental labor, with now failure and now success, according to the affairs of this world, but by miraculous procurement. He condemned labor. "La-

bor not for the things that perish." "Seek first the kingdom of heaven and all these things shall be added unto you." "My Father knoweth that ye have need of these things." "Ask and ye shall receive, seek and ye shall find." "Behold, the birds of heaven, they sow not, neither gather into barns, and your Heavenly Father feedeth them. Are not ye of much more value than they." "Why are ye anxious concerning the raiment. Consider the lilies of the field, they toil not, neither do they spin, yet Solomon in all his glory was not arrayed like one of these." "If God so clothe the grass of the field which to-day is and to-morrow is cast into the oven, shall he not much more clothe you. O ye of little faith?" He exhorted against taking any thought for food or clothing, or for things of the morrow.

It is evident by the answer Jesus returned to inquiries sent by John the Baptist, that he purposed to set up a miraculous kingdom on earth, that should not be earthly in its mode of administration. "Go tell John the things which ye do hear and see, the blind receive their sight, the lame walk, the lepers are cleansed, the deaf hear, the dead are raised up." He declared to Pilate that his kingdom was not of this world. He also declared in his great prayer that the subjects of his kingdom were given him by his father out from the world, and they were not of the world as he was not of the world. So radical and momentous was the subjection to the allegiance of his kingdom that the dearest ties that bind to the economy of the world,—the love of father, mother, wife and children, and life itself, was incompatible with it, and must be renounced. He said he did not pray for the world. His kingdom and the world were two dissimilar and separate affairs. Therefore it was not his intention to benefit the world on the world's principles of administration. Hence the folly of Te Deums on the triumph of battle, or praise and thanksgiving to God on the success of any worldy enterprise. There was to be no blend-

ed or amalgamated union between the heavenly elements and the earthly that there should be a loss of the distinctive properties of each in a new substance, as it were. Nor were individuals gradually to absorb the heavenly elements so as to be uncertain to which master they owed allegiance. The difference was immediate, radical and redeeming. The characteristics of each should be distinctive and clear cut. There was to be no mistaking tares for wheat. It is vain to say that these positive statements intend only a relative value, while there is no hint in their connection or elsewhere in the record of his saying, that he did not intend the full meaning of his expression. And he had the teaching of the Old Testament to back him. It was man's disobedience that determined the curse of the earth and the need of man's labor for his support. And when a new divine effect was made to set up the kingdom of heaven and to retrieve man's lost fortunes, God undertook the task by miraculously delivering a selected tribe from Egyptian bondage, and continued the effort for forty years without a break, and for centuries thereafter with varying success, fought its battles for possession of lands without the recorded loss of life or wound to one of the tribes as long as they obeyed the divine commands. And the inspired writer of the 105 Psalm says: "He brought them forth also with silver and gold, and there was not one feeble person among their tribes."

Discussion 25. It cannot be denied that the quotations above, coming from God that made the worlds and all things, are sufficient authority for undertaking any physical problem by prayer with the assurance of accomplishing it. During the centuries of the dark ages Christendom was altogether Christian, and not at all scientific. The statements of the two Testaments were taken at their obvious face value. And the Catholic allegation that what Protestants call "the dark ages" were ages of Christian light superior to any ages since, may

be defended from the Bible standards. As the Bible is God's revealed will to man, it must needs be the supreme authority. The kingdom of heaven is the Church of Jesus Christ, according to the New Testament, and is the organic embodiment of divine wisdom and power, and exercises it visibly through agents selected and invested with fitting qualifications to administer the kingdom, it must be presumed by the king, if the kingdoms be really or divine origin. For we cannot suppose the kingdom had a heavenly source and then left to the abortion of every heavenly issue through the ignorance and wickedness of its human administrators, abandoned by the divinity that gave it birth. The supreme legislative, judicial and executive power is conveyed in the short symbolical deliverance to the Church of the keys of the kingdom of heaven with authority to forgive and retain sins, and to loose and bind in heaven such as should be loosed or bound on earth. As the grant of power is not given in detail but in comprehension, it must by implication carry the authority to unfold and develop the symbol according to exigencies as they arise, to formulate doctrines and prescribe ritual and the proper conduct of its subjects with retributive judgments, and authoritatively to interpret and construe the teaching given verbally and by deed by him who came from heaven to institute heaven's kingdom on earth, and therefore to insure its success. And as the Church should never be overcome by its foes and its great head would not permit its enemies to stand before its defenders in a verbal contest, the implication is that the development of the grant into particulars should be guided, controlled and consummated in accordance with the supreme head of the kingdom. The Church is not a democracy but an absolute monarchy. I know that the first proposition is affirmed by some Protestants and the second denied by them. The idea of kingdom and king is opposed to the Protestant view. All theologies repose on the conception that God is

an absolute monarch. A democratic kingdom founded and appointed by an autocratic sovereign who cannot abdicate his throne nor his authority is a self-contradiction. Christianity cannot deny without stultification that its author is the absolute ruler of heaven and earth. The New Testament in its origin, doctrines, and appointments, presents the Church as a monarchy, not a democracy, visibly administrated by its members, but secretly selected and endowed by the great head of the Church. "Without me ye can do nothing." "I am with you alway, even unto the end of the world," and other passages carry this implication. Indeed it is a necessary one to afford expressional and efficient harmony between what is proposed to be done and means of doing it.

Let us see if the historical working of the Church furnishes reasonable evidence that the claims set forth in the Bible of a *bona fide* kingdom of heaven projected on earth by an Almighty omnipresent and omniscient being. It is recorded as if spoken to Isaiah by Almighty God, "I am the Lord; that is my name, and my glory will I not give to another, nor my praise to graven images." It may be seriously questioned whether monotheism which is the view presented in the Old Testament is not contradicted by the Holy Trinity of the New. And judged by reason and common sense whether both the monotheism of the Old and the Trinity of the New, are not antagonized by the adoration of the Virgin Mary, the worship of images, the invocation of saints, and the devout attachment to relics and shrines. The worship and invocation of these objects were almost universal in Europe during the dark ages, and by no means are yet abolished. It would be difficult logically to avoid the conclusion that the motto of the "false prophet," "There is but one God," does truly express the idea of monotheism, and the Christian Trinity does truly express the idea of polytheism. Theology is not a science, not objective knowledge and subjective knowledge concerns ourselves.

It is not an intuition or demonstration; nor is it a necessary assumption. If all Gods have been discarded from Christendom but one, why should one be retained? The many were once held to exist as certainly as one is now held to exist. The Gods were as helpful and satisfactory, as responsive to prayers, and sacrifices offered in faith then to the many as to the one God now. Increase of intelligence has banished all Gods but one from the most enlightened portions of the earth and judging the future by the past, it will banish the one. Notice the difficulty with which the devotees of one religion relinquish their faith and accept another radically different. One religion is as comforting as another without being subjectively truer or objectively more false, so far as divine existence or deed can be proved. One God accounts for phenomena as well as another, since it is one's *faith* in the absence of all objective proof. The supernatural does not lie as an object of discovery in the course of man's advancing intelligence. It is not involved in any department of human knowledge. Nor can it be used as an intelligible solution in any problem in nature, for the best reason there is no supernatural as the object of our knowledge. Science is distinguishing itself more and more from religion.

Discussion 26. No recent text book of the physics of the heavens declares as an intelligible explanation of stellar order, that God, as an historical event, created and arranged the heavenly spheres in the order we know them. But if science assumes the position, for which there is valid evidence, that the matter which constitutes the solar system was once in a revolving, attenuated mass from excessive heat, the known laws of the dissipation of heat, the consequent cooling and contraction of matter, the increased velocity of the revolving mass, and so forth, would at least result in the present order of the solar system. This would be an intelligible explanation, for the mind is able to see the course nature must take

and the final issue, not what course arbitrarily assumed will might take. The mathematician is able to see that of necessity the sum of all the successive angles formed in a plane and upon one side of a straight line, is equal to two right angles. And the intelligent human intellect cannot assent to the declaration that the will and power of any being caused the sum to be just this, or could cause the sum to be more or less, or cause any mathematical axiom to be what it is, or make it different. Whatever we are willing to say God has ordained or caused, we cannot admit that he has caused mathematical truths. Whatever the mind sees axiomatically it cannot be persuaded that God has caused it to be so. What we see to be of necessity we cannot allow to be of choice. And this is a limitation upon the assumed divine existence and power. The domain of inevitable truth, cause and effect, is enlarging as man's reach of comprehension enlarges. The divine causation is religiously summed up in the creation of the material universe and in giving it laws of procedure in phenomena. But the mind rejects a cause or beginning of space and time, and a creative cause of mathematical truths, and declares there is of necessity eternal existence. The necessity of postulating eternal existence cancels all need and all right to postulate either creation or creator of existence. Eternal existence carries with it the necessary laws of its existing and of the processes of phenomenal becoming. There issues from thousands of pulpits every Sunday the reiteration that God is an eternal infinite personality, creator of the material universe, of all life, the bestower of all good things and states. This is the great fallacy of endowing a word with universal estate, instead of finding universal being. It is the fallacy of substituting a fiction, the religious averment of the supernatural, for the essential, concrete and psychic, and all comprehensive existence and action of the universe, as the be all and do all. This is the position common to fetichism, animism, polythe-

ism, and monotheism. But no evidence such as is adduced to prove any other proposition can be brought forward to prove this. If this is true really and causally, it is true objectively. But the supernatural is not a theorem—a demonstrable theoretical proposition; not a problem—a demonstrable practical proposition; not an axiom—an indemonstrable theoretical proposition; not a postulate,—an indemonstrable practical proposition. It cannot be used for any purpose of knowledge whatever, nor as a step in the solution of any problem. A solution is an explanation of *how* a thing is done. Nothing of which we know anything is self-existent, self-conscious, or self-active under the pervading and overmastering teaching of theology. All things of our knowledge are religiously banked in something of which we know and can know nothing.

The fiction of a supernatural we have said cannot explain anything, for it is not known how it acts, that it acts, or that it exists. How can it be distinguished from nature and be identified as the supernatural? What are its methods of working, and what the products of its activities? Is it said, the creation of the universe? Yes, this reply is very easy. But is to say so, any evidence of its objective truth? There is and must be eternal existence. The universe exists, and shows no marks of having begun to exist, and there is no competent evidence of such an event. The universe is all that is known or can be conceived, or need be averred to exist. This is evidence that the universe is eternal and uncreated. There is much allegation that the universe is the product of creation. But what is the need to allege, and what and where is to be found the evidence that sustains the allegation? I suppose the Christian will reply, the Bible. But can the competency and integrity of this witness, sworn "to tell the truth, the whole truth and nothing but the truth" under cross examination, satisfy an unprejudiced but intelligently

critical court, that its testimony is the original divine source of evidence, and not hearsay, and finally traced to a writer of fiction. But this book of fiction, like much other folk-lore occurring in the department of faith which is the most deserving virtue, and ensures the objective truth of its objects, in the absence of any evidence, has passed through many editions and many changes and still has many readers and believers. The universal order of nature needs no postulated supernatural arranger to impose upon nature what is foreign to it. Absolutely no interrelations among differences, simply no order whatever, is antagonized by intellectual necessity. There is no absolute unconditioned, unrelated, no order among differences. But the whole of difference is of necessity one ordered and interrelated system, or universe not devised and created, and ordered by intelligence and power foreign to the universe, but every thing part of and involved in the universe. Of necessity there must be alleged relativity among all existences, not concrete only. The inevitable mathematics of space and time impose their universal order of related positions, duration and change throughout infinite extent and infinite difference, and bring into systematic order the whole universe.

Discussion 27. We cannot predicate mind in the absence of matter, nor as product or property of matter, *per se,* but only of matter in states and under conditions not fully understood. There is a reluctance to hold matter to be the basis, the scene and the productive means to mind, and an effort to find first through denial that under any conditions of itself can material nature function consciousness, which in its highest and lowest degrees is the consciousness of itself, i. e., nature they would say is not known and felt by, and to itself, but by and to a foreigner; and then comes the affirmation of an immaterial or spiritual persistent substance which itself thinks and feels and acts. And while the proposition of eternal un-

created self-active existence is self-evident, or must be postulated, and nothing but matter in motion known as energy or force, is known or with good evidence is held to be quantitively persistent from an indefinite past and therefore by inference to an indefinite future; and no immaterial or spirit substance is known to exist, not to say has persisted from an indefinite past, and therefore may continue to a remote and indefinite future. I cannot say nor do I feel, that eternal and infinite nature identified as the sum total of all that is, has been, or possibly can be, may not hold out all the reasonable grounds of a future life. Since these grounds, if there are any, must be of her, come from her, and realize their issue in her, to expect personal life and blessedness during an indefinite future. They cannot be reasonably furnished by a word-constructed and word-endowed being, denied to be of nature, that is, denied to exist under conditions of space and time, which thought cannot distinguish from denial to exist at all, but words may; and affirmed to be supernatural; *affirmed* this and nothing more. Besides the universal relativity of all existence, states, properties, qualities, positions and motions, expressible in space and time orders and degrees, there is growing up among scientists, the conviction that chemical atoms do not express ultimate and persistent differences of matter; that the sum total of qualities and powers reside not in matter *per se*. But in the naked entity of matter there is the least of properties and powers, and all differences of atomic elements and all varied powers and phenomena are the issue of the mechanics of one matter, whose most distinguishable attributes are numerical, formal and motile. Of this essential unity of least qualities and greatest multiplicity of numbers, all differences and powers are determined by the mechanical relations of numbers, forms and motions. We must hold that chemistry is mechanical placing and action. This leads to the averment that the universe in the last analysis yet at-

tainable is attributable to one matter, not to seventy or eighty matters each of an absolute kind. And all differences whatever whether called physical, chemical, vital or psychical or otherwise, are evolved from the mechanics of essentially one matter in the infinitude of its numbers, their combinations, forms and motions.

Evolution, or we may say the relative but not absolute creation of properties, qualities, and powers arise or come into the actual fact of being from the mechanics of elements in which singly and alone there is not a trace of said properties, qualities or powers. This is somewhat illustrated in the ten arithmetical forms. Each in itself is only a shape. But it has come into usage that each figure shall represent a definite abstract power or value, and this power rises or falls in value as the place occupied by the figure is related to the places occupied by other figures of the same arithmetical expression. But arithmetical relations are not creations of intelligence, but representations discovered by intelligence of the necessary economy of nature; or nature's discovery of itself. The same principle is illustrated by the letters of an alphabet, which by themselves are merely special forms, each called by a definite name and represents a definite phonetic value. But these forms only become significant as they are assembled into precise mechanics of words, these into sentences, and these into discourses. These instances only partially illustrate what nature is everywhere doing on the most stupendous and varied scale in creating properties, qualities, powers, and all phenomena of the universe through material numbers comparatively negative of differences of intrinsic nature, built into precise mechanical structures, and these into groups of higher order, and each single element moving in a definite velocity, amplitude of range and direction within the structure, and each structure in motion of precise direction, amplitude and velocity, within the limits of the larger groups. And all this complex mechanics is with-

out known or traceable, or necessity of implied intelligent purposive direction of energy as a separate agency and distinct feature. That is, that the material elements without intelligence in themselves or an intelligent agency directing their movements and coercing their positional and motile mechanics, separate and distinct from them in their midst or remote from them and determine the products, take their interelated positions in the physical, or chemical, or organic building and execute their motions and deliver the necessary resultant products, without foreign, i. e., supernatural architect or artist. The fact of existence, its laws of existing and action, of forms, functions, changes, evolution of products, and the universal ongoing of nature are parts of eternal nature itself. Intelligence is partial, local, numerical and is the issue of a definite organization of matter, under definite external conditional, without an intelligent agency so far as is known, or can be traced, or of necessity must be inferred. Intelligence itself is the product and deliverance of the most complex material structure known, constructed without a trace of the guidance of intelligence as a separate factor ordering the construction, or imminent as an efficient or final cause in the elements taking form, or determining the function of the structure. But it is appreciable to sufficiently cultured intelligence, as all things, events and relations are. There is no wreck, no tangle, no disaster, no construction, no destruction, of worlds or atoms, no happenings, but a sufficient intelligence would discover that every part, piece, form, state, and action, under all the circumstances, is just what, as, where and when, it must be of necessity. And in this statement I include the factor and issue of intelligence. For all differences that make up the universe are and must be of necessity interrelated or orderly arranged in related positions, actions, states, causes and consequences, in simultaneity or succession. Not that they were arranged in the order they bear by an intelligence and

power superior to and other than the universe. Or that the universe could of possibility, be in no order whatever. The universe is eternal self-existing and self-evolving, and self-interrelated and self-functioning. All becomings are predetermined from eternity as involved in eternal and universal nature, not predestined by an intelligence and power foreign to, and other than nature, by whom they were incorporated into a created and constructed concrete universe. But nature is eternal and eternally endowed without a foreign endower, with necessary and inevitable mechanical and mathematical interrelations in all its changeless quantity of matter and energy and changing phenomena. And all this relativity and fact must be lodged somewhere. And we may better lodge it where we find it and know it is than where we do not know it is, and are under no necessity or constraining evidence to place it there. The necessary attributes of space and time determine to our intelligence the order of all changeless and all changing existence. Nature is without teleology or final cause, because she has no final end, as she has no first beginning. What is without beginning must continue without end. There is no supernatural. Relativity is universal and inevitable. There is no creation of matter or energy. Evolution may be called creation of forms and functions, and consequently of products. But they are all changes of what was before. There has been no addition to quantitative existence.

Discussion 28. The great mistakes of philosophy are the postulates of one definite intelligence as the all determining factor in all that is, becomes or changes; the creation of matter; the endowment of matter with motions; and the interrelating of universal nature in accordance with previous design, and intelligent working to the devised plan. This method can never yield a philosophy. This tracing of existence and phenomena to its source in free will, will never find such source either by proof or in the necessity of its affirmation. Free will or arbitrary

choice cannot be recognized as the presupposition or finality of a scientific philosophy. For scientific methods have and can have no relations to an absolute and unrelated entity, not even the determination that it is, or that it need be postulated. Philosophy must found on the axiomatic assumption of eternal uncreated existence, and the full and adequate reason of all becoming and change must be involved in eternal existence and conditions, both the fixed and universal and those that have come by formal changes, and that of necessity. Existence and phenomena are the only subject matter of scientific inquiry. The inquirer, his investigation and methods, and the results, are all included in nature, and are nature knowing and trying to know itself. The investigation of nature must ground on the axiomatic assumption that nature or the universe is eternal and uncreated, under the necessary presuppositions of space and time, which of necessity assure all things, and all changes, and all functions, and all qualities, to be related in mathematical order, and therefore intelligible. Existence cannot have begun of arbitrary free choice of whether it should begin or not. For the primary and inevitable assumption is not free choice, nor creation, nor creator of existence, but existence uncreated and eternal. And from this necessary assumption, the allegation of a creator of existence seems an impertinence. And human intelligence even perverted by a religious revelation I should suppose could not descend to the absurdity of declaring that space or time were created or began to be, or axiomatic truth ever began or can ever cease to be true. There cannot be finality except in eternal existence and necessary truth and necessary becoming. Of what may have been or not have been, or what might have been other than, where and when it is, contingent on arbitrary free choice, with all conditions, circumstances and results included in the free choice, we know of no illustration in the universe or out of it. Should it be asked why the

straight line is the shortest distance between two points, or why all the angles that can be drawn or thought within a circle little or big, all the vertices being on the center, are equal to four right angles, and no more; would the answer be, God caused it to be so, the implication being if he did so, he could have caused the truths to have been otherwise; or would it be, it is impossible that it could be otherwise, and impossible that the propositions ever began to be true? If the truth of such propositions in cultured human thought rested in the conviction that it is the effect of a free will choice to have it so, and consequently contingent on the continuance of the creative free will, the whole aspect of nature would be changed. And the feeling of nature's constants and stability would be lost, and neither enduring science nor philosophy would be possible. And as at different periods in the history of Christendom many believing in the creation of the world had a legitimate ground to believe in its annihilation, and as its destruction by fire had been foretold and signs of its near approach given as its creation had been declared in what they accepted as a divine revelation, groups of people have lost confidence in the world's continuance and become demoralized in the expectation of its speedy conflagration. It is a legitimate inference that what begins must cease. Creation from nothing is not a necessary postulate, neither is it a proven fact, therefore material existence and energy can not be ascribed to a creative cause, nor axiomatic truth to free choice, but to the necessary postulate of eternal existence, and self-evident truth upon the necessity of its being true. Of arbitrary will or unconstrained, unconditioned, undetermined choice to be or to do, there is no known or conceivable example in nature or human nature. All things material, functional and psychical are interrelated, nothing is unrelated or alone, or can be conceived destitute of parts. Existence and phenomena cannot ground on arbitrary choice that they should be

rather than not be. Choice cannot account for necessary existence nor for necessary truth which it is the destiny of our nature to hold eternal and inevitable. But choice, a dependent psychical phenomenon, is as much necessitated by its causes, as the falling of an unsupported stone.

There is no first cause where there is no beginning. Effect is the necessary consequence of its cause. Choice is a subordinate factor and implies deliberation and two or more alternatives, and is finally necessitated on the line of least resistance and the greatest influence. All cause is imminent for it brings effect to itself, albeit it may be transitive also. No cause is absolutely one, that is, without conditions and relativity *per se*, or has no contributing factors as method, state of that which is to be acted upon, environment, when, where, etc. If the creator is eternal and uncaused he or it must have a nature independent of his or its free choice either to have or not to have. Self-destruction would be as impossible as self-creation, if creation of the universe was a necessary outcome of his nature and therefore unavoidable, though this would not exclude the factor of volition were this involved in his nature. And unless involved in his necessitated uncaused nature, it cannot be conceived how it could be there to be exercised. Volition is not the contradictory or even the contrary of necessity, but wherever it is exercised it is an element in necessity. On final analysis necessity is seen to determine all being and all change and production. Creation from nothing is unintelligible and inconceivable, and as absurd as it is useless. To speak of creation from eternity is self-contradictory. It both affirms and denies date in the same sentence, i. e., it affirms and denies creation, for creation supposes an act as well as a product, and eternal existence denies all beginning and all dates. The eternal uncaused cause is not to be conceived as potential and antedating the effect, as not yet ready or empowered to be-

come a real cause. This would deny the eternity of cause. Therefore it cannot be volitional or deliberative, as determined by the greater persuasive validity of some alternatives than those opposed. And volition cannot command the consequence of cause except in the cause, nor its destiny. Every cause is destined as well as every effect. Cause implies effect already in being. We must begin with the uncaused and eternal, as our necessary primal postulate.

Discussion 29. It might be urged that it would be illogical and even impertinent to claim that what has been presented above as to the relations and properties of cause has any application to the creator or creation of the universe, for we know nothing of the nature or methods of action of such a cause. We grant the force of the demurrer, but whether against the writer or the objector depends on what can be shown as to the objection. It is true, and carried a step further is just as true, and it states my view. No such cause and effect as a creator and the created universe are known to exist, or ever to have existed, or can be proven, nor are there tenable grounds for the hypothesis. Therefore until creator or creation, or the beginning to exist of the universe, or at least reasonable grounds for the hypothesis can be shown, the application of cause to the existence of the universe would be illogical and even impertinent. Eternal uncaused existence is a necessary indemonstrable theoretical proposition. As the historicity of the creative act producing the created effect of the universe can never be proven, nor shown to be necessarily implied from the fact of the universe, as against the demonstrable theoretical proposition, *viz*: Nothing can begin to exist without cause for beginning to exist. Nothing can be its own cause for beginning to exist. There is existence. Therefore there is eternal uncaused existence. It cannot be said by the advocate of any religion, from the proof of it, that my God is the uncaused and eternal existence that as such must

be postulated, that has created the universe; nor from any proof of it, that the universe began to exist, making its creation a necessary implication. I take the declarations of the creation of the world as contained in the so-called sacred and divinely revealed writings to be as wholly human and as destitute of divine revealment as any other writings. The writers and their age of the world knew scarcely anything about the world, and had no conception of the impossibility of absolute creation, and held any new appearance to be a new creation. And the back-woods part of the present age holds to the same notion for the same reasons; they have been so taught, it is an easy solution of all difficulties, and they know no objection to it. As knowledge of matter, force, and mind increases and consequently problems and theorems augment in number and difficulty, by means of the one open sesame—the word God, all is satisfactorily accounted for. As the conception of the world is enlarged by the telescope and microscope, by the study of the earth's structure, its petrifactions and its living fauna and flora, it is discovered that there had been no separate individual or species created; indeed, there needs not the hypothesis of creation. But evolution of forms, functions and attributes, of all present organic beings from former beings, with slight difference from difference of conditions, brought about in time by these selections of nature, without what we call intelligent choice, all difference in organic beings has thus been evolved. This organic principle becoming established by a wide experimental and observed induction and constantly gaining in the judgment of those whose intelligence on the subject entitled their judgment to consideration, and all bearing adversely on the statements of creation of the sacred books, the advocates of their inerrancy were sore distressed until they discovered how to work the problem. The same talismanic word was found to work equally well in every emergency. Nothing has yet been discov-

ered but there is one word that means more. In science it is observation, experiment, proof in logic, it is premises, reasoning, conclusion; in theology it is God. Darwin carried back an assumed possible creation of organic life to some one common primordial germ. He says: "All living things have much in common; in their chemical composition, their cellular structure, their laws of growth and their liability to injurious influences. We see this in so trifling a circumstance as that the same poison often similarly affects plants and animals, or that the poison secreted by the gall-fly produces monstrous growths on the wild rose or oak tree. In all organic beings the union of a male and female elemental cell seems occasionally to be necessary for the production of a new being. In all, as far as is at present known, the germinal vesticle is the same. If we look even to the two main divisions, namely, to the animal and vegetable kingdoms, certain low forms are so far intermediate in character that naturalists have disputed to which kingdom they should be referred; and on the principle of natural selection with divergence of character, it does not seem utterly incredible that from some such intermediate production both animals and plants might possibly have been developed. Therefore I should infer that probably all organic beings which have ever lived on this earth have descended from some one primordial form." *Darwin's Origin of Species.*

Evolution vs. creation has been for about fifty years the scientific explanation of animate nature; and it is coming to be recognized as equally applicable to physical nature, to all differences of the kinds of elements of matter. The chemical atoms until recently were held to be undecomposable and changeless kinds of primitive matter, but are now discovered to be resolvable into components 1,000 times smaller than the smallest chemical atom, and to lose all the properties of the chemical atom which they composed. The amazing thing coming to

light is that all the corpuscles composing all kinds of atoms are every one just like another, and equally adapted to become a constituent part of this or of that atom or kind of matter. That is, all the differences of kind of matter, their forms, functions, capacity for service, all properties, states, qualities, activities and resultants, are effected by what naked and alone are only the properties of numerical difference, charged with electricity, motion and capacity to enter into mechanical union with its fellows, and take part in any service in nature. The corpuscles at their present showing seem to be the primitive stuff of which nature is made, and appear destitute of anything that may not come strictly within mechanical expression and handling, presenting strong evidence that the universe is everywhere mechanical and consequently to be mathematically interpreted and construed.

Scientific insight is prophetic. "As early as 1816 the celebrated Faraday pointed out the possibility of a fourth state of matter, as a consequence of a hypothetical transformation which transcends evaporation by as much as evaporation transcends the fluid state; or, he expressed his thought still better by saying that he looked forward with the greatest impatience to the discovery of a new state of the chemical elements. He suggested further, and this has an especial interest with reference to the theory with which we are now occupied, that the decomposition of the metals, their recomposition, and the realization of the formerly absurd idea of transmutation, were problems which chemistry one day must solve." *Modern Theory of Physical Phenomena, Richi.*

Discussion 30. The intrinsic and its amazing functions come from the extrinsic, and the intrinsic dissolve into the extrinsic. Nature is evidently one universal mechanical system composed of a vast multitude of contributing mechanical systems, and includes every reason why it is and for what it does. And there is no evidence that its mechanics were planned and produced or are

sustained by what we know and feel to be intelligence, or that its force is a kin to what we call physical strength. There is no reason to predicate intelligence as a universal factor in nature's operations.

Matter, stark, seems to have only the attributes of magnitude, multitude, form and motion. Investigators are declaring that matter is everywhere charged with electricity. The corpuscles whose numbers make up the chemical atom, has by rigid mathematical measurement been determined in its mass, in its velocity of motion, and its electric charge. To these must be added the capacity of entering into positional and motile relations with its fellows, and performing differentiated functional service according to numbers in certain related positions and motions and according to a related environment. This seems predicable of matter *per se.* But all further differences of phenomena, as to chemical atoms, properties, states, qualities, life, feeling, consciousness, etc., appear to be involved in the mechanics of numbers, positions, and motions of the corpuscles. "This view gathers strength from the fact that whether derived from glowing metals, incandescent carbon, gas flame, ultra-violet light waves, or no matter from what source the corpuscles are obtained, they are all alike in their corporeity and behavior, one differs from another only numerically. This furnishes reason for the belief that matter, in its naked entity has been reached." But we need to hold this opinion loosely. Nature surrenders her ultimate facts with much reluctance. It is surprising if man has come upon nature's ultimate unit of magnitude, number, weight, concrete form, and motion, the primary element of all else. In no proper sense can space or time be said to have primary elements. Matter and electricity are always quantitatively associated, so that electricity is no longer considered fluid, but as atomic. An atom of matter has associated with it a charge of electricity as definite in quantity as is the atom. This

has been carried so far by some investigators as to hold that corpuscles are not particles of matter charged with negative electricity but particles of electricity possessing properties of matter. "Matter is made up of electricity and nothing but electricity." The invariable quantity of electricity associated with a corpuscle is called an electron. The mass, velocity of motion, and the electric charge of a corpuscle, has been determined. Its motion as it flies off from a disintegrating atom depends upon some conditions and is said to vary from 10000 to 90000 miles a second. The mass of the corpuscle is computed to equal $\frac{00000000034}{10,000,000}$ and the mass of the hydrogen atom to equal $\frac{0,000,000,00034}{10,000.}$

If, at the present state of science the anticipation of Prof. Farady is not fully realized it seems on the point of becoming so. That the corpuscular is the fourth state of matter and transcends the gas state as much as the gas state transcends the fluid state, seems true enough. It is very recently discovered and it seems a permanent acquisition to science, and not less amazing than was the announcement and proof of the law of universal gravitation, that the union of homogeneous bits of matter differing only in numbers and the mechanics of their combinations and motions constitute all the differences of the chemical atoms. Perhaps the point least sustained by evidence is whether when an atom is disintegrated into its constituent corpuscles they unite differently than before and form another kind of matter and so prove the transmutation of metals. But whether this can be shown at present or not, it seems in evidence from diverse quarters that all differences of chemical elements find their common cause in the mechanics of the corpuscles. The chemical mechanics of the atoms form the molecules and evolve their properties, these

raise the mechanical complex a stage higher and we have protoplasm and the evolution of physiological action and the coordination therewith, the function of life. We now have the germinal vesicle evolved, which Darwin says is common to all organic beings so that every individual organic being starts from one common origin. The discovery of corpuscles and their place and functions in nature has carried the unification of all differences apparently to the final limits. And now the further effort may be to confirm the present epochal discoveries and lead the further quest of determining the particular form of structure that functions the different kinds of matter and that yields life, feeling and consciousness; and what is the structural difference between the cell that develops into a plant or animal, into mouse or man, and whether at a certain stage of cell life what it shall become depends not on its source, but on its environment and its supplies. Some men of science have long felt that at the bottom of all differences there is one unifying substance whose necessary eternal self-existence necessitates all changes and orderly functioned products, and properties that suddenly emerge from what could not have been anticipated as their causes. We start from nature's eternal uncaused, imperishable, and universal units of material substance which differ only numerically, and which in complex positional and motile interrelations among themselves become the source of all difference of the 70 or 80 chemical elements. Thus much may be said to be within the clear vision of science as a fact, but not its how or why. We are learning that infinite differences come from infinitesimal masses of matter in innumerable numbers, in complex mechanics of positions and motions. Here lies the potential essence and *vis viva* of all difference whatever, and not hidden in the nature of substance. All possibilities and actualities may be said to be involved in matter, motion, space and time. All properties and

qualities are co-ordinate with certain mechanics. Chemistry, physics and all life's processes and realization lie at bottom in mechanics. "By a necessity engendered and justified by science, I cross the boundary of the experimental evidence, and discern in that matter which we in our ignorance of its latent powers, and notwithstanding our professed reverence for its Creator, have hitherto covered with approbrium, the promise and potency of all terrestrial life." *Tyndall Belfast Address.*

Here is a quasi-recognition of the creation of matter, probably as an implication of discredit upon those who profess to believe in the creation of matter and could not accept the truth as he held it, of his emphatic assertion, *viz*: that in matter he "discerns the promise and potency of all terrestrial life." Surely the creation of matter is not and cannot of "necessity be engendered" or "justified by science," nor can it be reached by "crossing the boundary of experimental evidence." Nor is creation what he declares he discerns beyond the boundary. There is no experimental evidence of creation. No experiment gives any intimation of the creation of an atom of matter, much less of the unnumbered orbs of space. Experiment gives no intimation that matter is coming into or going out of existence, but on the contrary, that it persists in one abiding quantity. So that the "conservation of matter and energy" has become a recognized universal formula of physics. Nor does he assert that science in any manner or degree recognizes the creation of matter, nor could he in self-consistency, being a "zealous advocate of the doctrine of materialism." What he asserts is that science implies that in matter is "the promise and potency of all terrestrial life." Theology asserts the creation of matter. But science affirms neither the creation of matter nor the truth of theology. When man is free from superstition, fetichism and idolatry, and becomes truly and wholly scientific as the basis on which he claims to know,

and the ground of his inferential faith, he will interpret the universe as eternal uncreated, and its universal order not determined or directed by intelligence and choice. But as it is uncaused in its substance and in the conditions of space and time, without which there could be no substance, and these are the background and impose upon and measure all things, so the mode of orderly existing and orderly change, and what every effect shall be is of necessity involved in eternal substance and its conditions, as their being and existence is uncaused, the one eternal uncaused cause necessitates all effects. So is the universe of necessity everywhere interrelated, therefore mechanical, consequently mathematical and intelligible.

Intelligence and choice are the product of nature, not nature the product of intelligence and choice. Considering the universe as one whole, as it is, the place and use of intelligence is very limited. There is no ground to hold it to be co-extensive with matter. And to our earth or any other material sphere, it must be limited to the animate part of it, for can there be intelligence where there is no life? And this is probably too extended an area by the whole vegetative kingdom. And Professor Loeb's researches show it to be too large by a portion of the animal kingdom, where it has been supposed the acts are directed by intelligence, he shows that the acts are induced by the physical stimulus of light and temperature, as truly so as by these stimulants flowers turn towards the sun and close their petals at night. Hop and bean vines are particular which way they wind their spirals round their supports. And is this an intelligent act?

Reverting to Tyndall's Rhetorical apostrophe, no, "the promise and potency" of all becomings, does not lie in matter *per se,* but in matter, its motions and the positional relations of its parts among themselves and the environment. This as local and universal, seems to

me to state the whole case and every case. Man cannot by his intelligence manifest stronger evidence of design and purposed plan and deftness in working it out, than inanimate nature shows everywhere in chemistry, in physics, in crystallization, in germination, in the moving mechanics of the heavens. And if man would do anything he must interrogate nature for his methods. For nature does whatever man does. And her causal aptitudes and exactitudes in the inanimate universe are not less marked where intelligence and choice as we know and feel conscious of them cannot be shown as exercising any agency. But Hylozoism is accepted by some. As an explanation, hylozoism is preposterously absurd. For some of nature's calculations or intuitions, where we can see no evidence of animation—dead matter apparently, far surpasses any human example of insight or calculation. It is generally conceded that the universe is one system of existence. And it is self-evident that there is and must be some mutual relativity, some order among all differences in nature. For it is impossible there should be no order, no agreeing relativity whatever. Nature's disagreeing is undergirded, and overarched and interrelated with agreements by which all products are brought forth. It manifests prevailing tendencies. We clearly see and there must be exact and universal order in space positions, and in motions in space and time order, for intelligence cannot produce disorder, here, nor indeed can it anywhere either produce or hinder order. For absolutely no order is an impossible conception and an impossible achievement, or any other order than there is,independent of there being any intelligence or will. The laws of gravitation, of affinity and repulsion, of the production and dessemination of light, of specific gravity, of temperature, of liquifaction and consolidation, of chemical combinations and the emergence therefrom of property, quality and of life, from bare awareness to the highest human capacity

and attainment, all are reached by matter and its moving mechanics, under the conditions of space and time orders. And all these laws of nature are nothing but physical interrelations and their legitimate sequences.

We cannot speak of life and intelligence, feeling or consciousness, without thinking of our own as a standard of comparison; nor personality, nor how matter could be moved by a materially embodied consciousness, without holding up ourselves as exemplars. Nor can we imagine an embodied consciousness and still an entitive being. Nor intelligence except as belonging to, and sharply limited to living, and organized matter of a high and complex order of structure. And the capacity for intelligence seems proportional to the complexity of material structure, especially nervous; and capacity may be increased in quantity, variety and deftness of function by the proper exercise of its motions, expended either on muscular or thought movements. Supreme place given to intelligence as guiding and controlling all orders and all movements must carry with it all power involved in universal kinematics and dynamics. As intelligence and intelligent power so far as we know it, is limited to living organized individual beings and each one separated from every other, and all analyzable into one common compound chemical substance, can it be said that we have reason to hold that life belongs to matter *per se*, to its atoms and unorganized masses? when to that portion of nature denominated animate, we distinguish the properties and capacities called living and are not manifested in that called inanimate? The substance that manifests all kinds and degrees of life and intelligence is one chief combination, and contains at most only about fourteen of the eighty chemical elements, and mainly only four. It will not be generally contended, I presume, that intelligence is more extended in the universe than is life. Further, have we reason to hold that chemical, physical and crystalline structures,

the positional relations and motions of the solar system and the stellar motions and masses, atom to atom, molecule to molecule, the separate motion of each atom and each molecule, in its own direction and velocity, and each and all in ordered interrelations, were once in thought, plan or idea only? And then, *when* and *where were not*, for when and where must be created as parts of the universe. Where creation is affirmed, it is a fatal omission to exclude space and time, from creation, which from the necessity of thought cannot be affirmed to have been created and still affirm the creation of matter. "Truth," says Cudworth, "is the most unbending, and most uncompliable, the most necessary, firm, immutable and adamantine thing in the world." Time is the measure and condition of all change, events, quiesence, and space the measure and condition of all concreteness, thought, feeling, action, life and death, for they must be somewhere. Therefore, if we are to have creation it will not do to account for the necessary conditions *to* creation from being created. It will hardly be contended that space and time are the creator, or the attributes of the creator, though I cannot see how the affirmation of their necessity as conditions of his existence and action can be any more avoided than of ours. If we allege existence and action, no matter of what kind or name, it cannot appeal to our intelligence except under the conditions of space and time. It is absurd to speak of existence independent of these conditions. If these infinite and universal verities, measures, and conditions, that necessitate order in all things that can be affirmed to exist or act, spirit and consciousness no less than matter and energy, can be eternal and uncaused; and it seems impossible that any intelligent person can believe or assert that existence objective or subjective can be exempt from the conditions of space or time, or could have originated these conditions. For though it may be held that consciousness does not in itself directly occupy

space, but if it is, it must be somewhere and as it belongs to the body and is in the body, therefore it is in space. Space affects consciousness through the vision, though it is not itself visible, and through the touch though it is not tangible. I cannot accept Kant's dictum that "Space is not a conception which has been derived from outward experience." And here follow the reasons for his view. "For, in order that certain sensations may relate to something without me (that is, to something which occupies a different part of space from that in which I am) the representation of space must already exist as a foundation. Consequently, the representation of space cannot be borrowed from the relations of external phenomena through experience; but, on the contrary, this external experience is itself only possible through the said antecedent representation. Space then, is a necessary representation *a priori,* which serves for the foundation of all external intuitions." The representation can mean no more than a latent capacity at birth to become affected by the ever present, necessary and universal conditions of all existence whatever. As soon as our eyes open the vision encounters objects in the midst of a space-environment, or emptiness, which never varies in kind or extent. We are as profoundly if not as early affected by the limitless extent of space as by the limited extent of objects in space. A limitless negation in the midst of which we live and move and have our being, and soon learn that it is the boundary and condition of all our eyes discern or hands can touch, and the length, breadth and thickness of any object we can measure has its exact equals in space measurements and the pure mathematics deals altogether directly with space and time as if they were as truly objective as are objects of vision or touch, and by a necessary inference one sees that he has dealt indirectly but as exactly as with objects in space, and all this is as truly a matter of experience as is the acquaintance of one's neighbors.

Discussion 31. We have before said that space is not an existence. Yet it is far from being *nothing* that can be, or need be, taken account of. While it is not existence, it is the *where* of all existence whatever. When anything is declared to exist, matter, spirit, thought, feeling, function, event, space and time are presupposed as their necessary where and when. If matter can be averred to have been created, or to have begun existing, neither space nor time can be so averred without uttering a manifest absurdity. And this is a prime distinction of what may be averred and what can not be averred without self-contradiction. It is possible to imagine one's self to be the only object in existence, or rather to withhold all image-making of sense-objects. But unless we can abolish self-consciousness we cannot expunge the consciousness of space and time, nor identify our self with space and time, nor feel that they have their source in us, nor have subjective validity alone, nor obliterate from our conviction that their validity is objective, even more clearly than is their subjective validity. Space and time are in the vivid conviction of the mathematician as objective facts, as he measures the earth's orbit, the distance to the sun, and calculates the time of the next eclipse of the sun and the portion of the earth where it will be total. And the artificer, when measuring space with tape-line, chain, or rule, has no notion that he is engaged in something that is akin to and has no more objective validity than his emotions, nor like his emotions where there is no sentient intelligence does he believe there is neither space nor objects in space any more than there are emotions.

Berkeley maintains, according to Kant, "that space, together with all the objects of which it is the inseparable condition, is a thing which is in itself impossible, and that consequently the objects in space are mere products of the imagination." *Kant's Critique. Meiklejohn's Translation, page 166.* Kant's philosophy teaches that

there are two kinds of knowledge, or intuitions, or ways of obtaining information, the sensuous or empirical, or through the senses as the result of experience, and the *a priori,* the unacquired by experience, or that which is already in us as native and as a necessary antecedent condition to any possible experience. That which corresponds to the sensation in a sensible object, he calls its matter, and that which causes the object to be perceived as arranged in a certain order, he calls its form. The matter of all phenomena is alone given in experience, but the form is already in the mind before experience, or *a priori.* Space is the subjective form of all external things, and is *in us,* not separate from us, but a property of mind itself. The time is also *a priori,* in and of us, and not without us, nor independent of us, and is involved in mind. Neither time nor space is of itself verity or validity. Were there no sensitivity and intelligence, time would not be. "Time is nothing but the form of the internal sense, i. e., of our intuitions of ourselves and of our internal state." "Time is simply a subjective condition of our (human) intuition which is always sensuous, that is, so far as we are affected by objects, but by itself, apart from the subject, nothing." The next sentence seems in conflict with this. "Nevertheless, with respect to all phenomena, i. e., all things which can come within our experience, time is necessarily objective." And the next sentence qualifies the last. "We cannot say that all things are in time, because, if we speak of things in general nothing is said about the manner of intuition, which is the real condition under which time enters into our representation of things. If we say that all objects of sensuous intuitions are in time, then such a proposition has its full objective validity and *a priori* universality." The teaching seems to be this: space and time and objects and events in space and time have in themselves no actuality, no validity, apart from a sensuous consciousness that appreciates and requires these conditions or

forms, which indeed are attributes of mind. "What we insist on, therefore, is the empirical reality of time." "What we deny is that time has any claim on absolute reality, so that without taking into account the form of our sensuous condition, it should not by itself be a condition or quality inherent in things." These views seem to carry with them this consequence, that the material and phenomenal universe depend for their actual existence and ongoing upon sentient consciousness to observe and be affected by them. "Space is nothing but the form of phenomena of all external senses; it is a subjective condition of our sensibility. It is therefore from the human standpoint only that we can speak of space, external objects, etc. Space does not represent any quality of objects by themselves, or objects in their relations to one another, i. e., space does not represent any determination which is inherent in the objects themselves, and would remain even if all subjective conditions of intuitions were removed."

Is the earth and stellar bodies dependent on our sensitivity for their existence, and space and time for their validity? All objective reality is made contingent on the subject. There is nothing until there is an appreciative consciousness of it. Surely the scientific world can never accept such philosophy. Subjective nature (a functional appearance of the objective) is not the cause of the external world nor of its manner of existing. It simply learns these facts through sense intuitions and critical reflection. Kant exalts the subjective and depreciates the objective. But he is not always self-consistent, as we shall see later. "Hitherto," he says, "it has been supposed that all our knowledge must conform to the objects; but under that supposition all attempts to establish anything about them *a priori*, by means of concepts, and thus to enlarge our knowledge, have come to nothing. The experiment therefore, ought to be made, whether we should not succeed better with the problems

of metaphysics by assuming that the objects must conform to our mode of cognition, for this would better agree with the demanded possibility of an *a priori* knowledge of them, which is to settle something about objects, before they are given us." "It sounds no doubt very strange and absurd that nature should have to conform to our subectjive apperception, nay, be dependent on it, with respect to her laws. But if we consider that what we call nature is nothing but a whole of phenomena, not a thing by itself, but a number of representations in our soul, we shall no longer be surprised that we only see her through the fundamental faculty of all our knowledge, namely, the transcendental apperception." Apperception with Kant is self-consciousness, and transcendental is the *a priori.* "All empirical consciousness has a necessary relation to a transcendental consciousness, which precedes all single experiences, namely, the consciousness of my own self, as the original apperception. This pure, original and unchangeable consciousness I shall call *transcendental apperception.*" "The numerical unity of that apperception therefore forms the *a priori* condition of all concepts." If our intuitions had to conform to the conditions of objects, I do not see how we could know anything of them *a priori.* * * * I must therefore even before objects are given to me, presuppose the rules of the understanding as existing within me *a priori;* these rules being expressed in concepts *a priori,* to which all objects of experience must necessarily conform, and with which they must agree."

Kant's theory in the part of the *Critique* I am now considering seems to be, that were there no consciousness of the material space and time universe, there would be no material space and time universe. If this expression were intended to mean only "to us," they would be truisms so bald as to indicate simplicity in a learned treatise. But as it is, consciousness, the pupil and product of objective nature, determines that nature is and

what and how she is. "Objects must conform to our mode of cognition." Under some dualistic systems of philosophy, as that of Descartes, Malebranche, Leibnitz and some others, "Knowledge implies even the contrariety of subject and object," says Sir W. Hamilton. As by these philosophers mind and matter can have no direct relation with each other, and to effect the knowledge of one by the other, the Deity must mediate. In reading the *Critique* one feels uncertain whether Kant was really a dualist or Unitarian. But if he maintains constancy to either scheme, it is to Unitarianism. He was an *a priorist*, not empiricist. A distinguished writer has said: "Naturalists cannot explain the world, they cannot penetrate to its first causes. It is absolutely incomprehensible to human reason how and whereby, if a single substance makes up the content of the whole world, the changes or transformations of this substance could either first originate or continue to take place." The question might first be asked, if two or many substances made up the content of the world, their origin or transformation could then be accounted for? The naturalist is not confronted with the question of the origin of substance, or matter, or motion, or space or time. A proposition that is self-evident, or a demonstrated theorem satisfies all demands of the reason. Something exists. Then something must eternally exist. For non-existence cannot be the cause of existence. Neither can anything be its own cause for beginning to exist. Whatever exists without beginning to exist, must continue existing without ceasing to exist. Here is a necessary postulate of existence; or the theorem of eternal existence demonstrated, unless the major premis—"something exists" is denied. I care not to argue against such absurdity. What exists in persistent quantity of substance, must have a mode of existing as persistent in quantity, distinguishable from the substance existing. It is the universal conviction of reason and of experience, so far

as experience can go, that substance or matter from atom to utmost *all*, is in motion, notwithstanding Zeno's proof that motion is impossible. And it is true that statics has no right of being without the presupposition of motion. For statics is strain or stress as local hindrance of motion. For motion is the universal and necessary mode of existing of all matter. Matter is not a contingent existence. It is eternal and therefore has no cause for existing beyond itself. This is not a gratuitous assumption, as we have shown eternal existence is a necessary postulate, or a demonstrated theorem. And substance must exist either in motion or not in motion. It is in proof that it exists everywhere in motion. Then it is self-moving as well as self-existing. Matter, motion, space and time, are the four-fold eternal ground of all else. Space and time give the natural necessity that all changes, combinations, separations, functions, properties, qualities and states are and must be in interrelated order. We can suppose no beginning, and no primal *no* order, then no intelligent power that put the *no* order into order. Then the saying ascribed to the Greek philosopher, Anaxagoras: "All things were mixed up together. Then mind came and arranged them all in distinct order," cannot be held as true. That what we denominate intelligence determines universal order cannot be maintained. But the order everywhere observed of related positions and motions of all things and events in nature, are natural, not supernatural. For what the Greek said: "All things were mixed up together" or were in *no order* among themselves, is not self-evidently true, and is without data for logical or physical inference, and antagonizes manifest data for contradictory inference. And the causal rise of life, consciousness and intelligence, appears to be as much the function of matter in interrelated combinations and motions acting and re-acting both against and in harmony with a certain environment, which life, etc., have no existence in

the separated constituents; as electricity or acidity have their causal rise in material relations. Intelligence is first effect, then perhaps a causal factor. The one most general cause of universal order and satisfactory to the God-religious consciousness and to those who have bestowed little or no thought upon the question, is the verbal supposition of a creating and order arranging personal Deity, either above and separate from, or imminent and diffused everywhere in nature, whose existence and creative power can be only a gratuitous assumption of words, for no power of the imagination can picture or realize the truth of words. Consequently this explains nothing, is no finality, is neither intelligible nor a necessary assumption, and suggests questions concerning the existence of the assumed Deity, which for their answers leaves us regressing in a line of creators of creators *ad infinitum,* or the verbally assumed creator must be assumed to be the eternal existence which necessity compels us to postulate. But of this gratuitously assumed existence we have no knowledge; which we consciously touch neither by sense nor reason, nor by necessary averment. And we make the stupid affirmation that the unknown, and, we may say, unknowable, has achieved the impossible feat of creating the material universe, space and time. To the materialist matter is the eternal, quantitative, persistent existence, that is, the necessary primal postulate. And by inevitable implication, eternal self-existence must have some mode or modes of existing, and ,we may say, in motion or not in motion. And because matter is not known to be anywhere in absolute quiesence, but everywhere known it is known to be in motion, and according to the known order of the cosmos, must be, motion is held to be the eternal mode of existing of matter. Energy or force is matter in motion, and is quantified to the sum of matter.

Discussion 32. The laws of interrelations of matter as to its mechanics of building by any mode of attraction

or otherwise, whether of corpuscles, atoms, molecules, or masses, accord and must accord with the laws or properties of space. And any changes in the interrelations involving motion follow the laws of space and time. Motion no doubt follows the law of least resistance. All this assures universal order. This means that eternal existence of which we know something and our bodies are part, and eternal necessity, and not intelligence which is partial and individual, nor arbitrary creative power which is nowhere known, need not be assumed, is inconceivable, and impossible as known fact, are under and causal of all that begins or transpires, not only in the inanimate but in the animate world. Intelligence and free choice which under a superficial view seem arbitrary individualities, with imminent powers, are strictly obedient to laws outside the individual which nevertheless include the individual, as cosmic gravity which includes the stone, causes the fall of the unsupported stone. It is the eternal underived nature of matter to be in motion and not at rest. Intelligent power as we are conscious of it (and we cannot conceive any other) cannot be intelligently held to be the cause of the existence of the universe, or of ourselves, or of the universal order of existence and change. Speculative philosophy guided by scientific verification of phenomena and necessary averment, lead to the declaration of the materialistic-mechanical system of the universe, uncreated and eternally persistent and ongoing. And all differences of states and functional properties arise out of positional and motive mechanics of *one* matter in its forms of corpuscles, atoms, molecules and masses, and others, if there be other forms. We cannot speak of primal or first form of matter. First has no place or relation to what is and never began to be, and is ever changing but never in its quantity. Perhaps it was Aristotle who said: "All things that become must become something out of something." This is an axiomatic

truth, and is the converse of the axiom, that from nothing something cannot be made to become. All matter from its nature to move and its self-attractions, takes form or state, but differing according to positional interrelations and motions, and to external inducing conditions. In all matter there is native architectonic, through its motions, its attractions, and combining properties. All living matter takes on specialized architectonic types, and builds its forms, for living matter is localized, individualized, in small groups of organogenetic chemical elements—carbon, oxygen, nitrogen, hydrogen and sulphur, which we are told by the organic chemist are found invariably in all living things. With these are generally (but not always) associated phosphorus, potassium, calcium, magnesium and iron. Here are represented the two chemical divisions of matter, metaloids and metals. Five, or perhaps nine, of the seventy-eight atomic differences which are chemically grouped of their own native tendencies in exactly related numbers, and as inanimate, immediately take on *life* as a property or function. On the special grouping of these particular material elements into what is known as plasma or protoplasm, *life* arises, becomes a property, an attribute, an invariable concomitant, of the material-chemical mechanics involved with the adaptive nature of these elements. This must be supposed since no others are found in living organisms. But mainly from the mechanics, because these same materials otherwise associated or combined, have not as a consequence the phenomena of life. And a slight derangement of this interrelated complex in the higher orders of living beings, renders life's processes either abnormal or extinguishes them altogether. And the elements return to the inanimate and inorganic realm of nature, without loss in quantity of each element or of aptitude to enter again into like relations with the like functions of life. How contrasted is the permanence of matter with ephemerous individual life!

Life is an exquisite architect and builder. As a tenant it builds its own tenement and vitalizes its materials, but does not shape them. Tenant and tenement are identified. They are one, yet two. At some points of the living structure of the higher animals no foreign invasion can interfere with the living mechanics without rendering abnormal or obliterating the processes and being of life, and wrecking the tenement. Another evidence that all life is one in kind differing only in degree, besides the fact that the same elements similarly grouped or constructed are causative of universal life, heterogeneous elements, or of dissimilar groups of perhaps some of the same kind, entering into the living organism anywhere along the line of life in either kingdom, acts as a poison to the life. Evolution is here most manifest. We discover that the organic proceeds from the inorganic, life from the non-living, the internal from the external, the subject from the object. The lowest order of life is hardly distinguished from the non-living. The highest in advancing from the lowest have been aeons long. The lowest forms of life, the Protista, are regarded as neither vegetal nor animal. And this harmonizes with the conviction of the universal and ever working of evolution. And it is not held to be applicable to the chemical elements, since the atoms are shown to be compounds of one essential matter, differing only numerically, the corpuscles. The differentiation of what before was homogeneous, the becoming one of what was two or many, or many of what was one, and the inherence of properties, capacities, or functions, by physical, chemical or physiological combinations or processes, where such did not inhere in the separate constituents or in immediately previous combinations, are evolutional or developmental processes and products, and are everywhere and always going on. And they consist of matter in motion taking on new related positions. The whole scientific assignable cause of the new inhering properties, qualities, func-

tions, etc., are the mechanics of matter, its interrelated positions and motions. And these structures and their moving atoms, with a favoring environment, necessitate or legitimate all the phenomena, functions, properties, etc., of the inanimate, animate and psychic world. The physics and chemistry of today have been developed out of material conditions of which we have now no known examples. There could have been no chemical action when the matter of the whole solar system was at a degree of heat that reduced all its matter to gases if not to corpuscles, and the atoms themselves probably developed from these conditions. How wonderfully different is the behavior or are the properties and functions of the same identical specimen of matter as it is in the gaseous, liquid or solid state. Oxygen and hydrogen, the two elements which by their chemical union form water, can now be solidified. In this state they neither resemble their properties as gases, or as water when combined. They behave as differently as do water and sulphuric acid, or ice and lunar caustic. The solar system itself is believed from many evidences of it, to have been formed from a nebulous state of its matter by the action of known laws. By organic evolution is meant that all the forms of plant and animal life on the earth today, have not been created, but evolved from regressively simpler forms and functions until the most complicated structure and function find their remote parentage and environment in a past less and less advanced in complexity, until there is reached a chemical nitrogenous carbon compound of the albuminous group known as plasm or protoplasm, homogeneous or structureless, an "organism without organs," which is seen to be alive, for it moves, takes in food, performs digestion, assimilation, excretion, grows and propagates its kind. As there is no differentiation of parts in this organism, there is no distinctively prepared structure for expert specialized function, but all parts perform equally well all the offices of life, which are the most rudimen-

tary known, the first effort of dawning life, of living matter to reach the psychic state. All this implies sensitivity to surroundings, which becomes the new internal center of conscious personality. And we have no date for a scientific inference other than the sensitivity is generated or caused by, is consequent upon, the action and re-action of the chemically complex and living plasma and environment. But this sensitivity need not be supposed to extend to the degree of self-consciousness. It is an advance upon simple chemical sensitivity, which may be assumed to account for the exact numbers and measured volumes that some certain chemical elements under some definite conditions enter into union with certain other elements. There must be a reason for the constancy and exactitude of this mutual behavior. We may say it depends upon the constitution of matter, which is very true, but there is nothing definite in this. The intellect does not as yet perceive what the precise reason is. Shall we say it is a native, or acquired relation through evolution? We may say that probably the chemical elements being formed by diverse unions of the corpuscles, and different material substances being formed and their properties evolved from unions of chemical elements, these classes of affinitive unions have their basis in, or are modifications of universal gravitation. And gravitation is the general expression of the universal and eternal and necessary mode of the existing of matter in motion, rather than absolute quiescence, one or the other being a necessary affirmation, since there is no third supposition possible. Motion and not quiescence must be held as the eternal and universal and necessary mode of the existing of matter. And as matter in mechanical unions and dissolutions, is always proceeding in exact interrelations, which imply the utmost exactitude of order, these mathematical interrelations of positions and motions are causal of all functional differences whatsoever. Evolution appears to extend to inorganic matter no less

than to organic, and is the previous and preparatory stage of the organic which is the state for the further evolution of life and consciousness. While we know that the organic reverts to the inorganic, and the same elements may again and again assume the organic complex and evolve life and consciousness, we have no reason to affirm that the identity of the consciousness will be preserved. But the evolution of the inorganic may, for anything that seems improbable, be carried into the organic and resolved back into the inorganic, without impairment of the aptitude indefinitely, and all inorganic properties conserved in number, quantity and intensity. But consciousness is quality individualized, is not susceptible of logical subdivision, is not measured by volume, is not a problem in geometry, is counted one by one but cannot be duplicated; its essence is feeling, self-hood. It is not implied that there are not many degrees of evolution of the inorganic before the organic is reached, and life and consciousness evolved therefrom.

Evolution stands opposed to creationism and founds on the recognition, that matter is the eternal and uncaused existence that of necessity must be postulated, and its unoriginated and eternal mode of existing in motion and the consequent and ever continuing change, with the necessary emergence from the mechanics of positions and motions, of all properties, qualities and functions, as is seen in all the sciences of animate and inanimate nature. And the laws of space and time which no one can intelligently suppose had a creation or beginning, necessarily assure mathematical order everywhere and always. And while we cannot and need not suppose that life is eternal and uncaused, we must at least grant that for the earth it had its origin on the earth and for cosmic reasons alone, since we know not and have no need to assume other, and if assumed the assumption is gratuitous and absurd, for we cannot without absurdity, suppose a beyond, out of, or other than, the cosmic universe.

Discussion 33. The recently discovered and accepted fact by those best able to judge, that the chemical elements are compound bodies, and their constituent parts, the corpuscles, are all alike in form, weight, mass and nature, the naked stuff, probably, of which all worlds are made and their wonders evolved; of man and all he is and can be developed into; the underlying persistent quantity,—material, whose unbegun and endlessly continued motions, collisions, colligations and dissolutions, neither weary nor waste, nor put out of aptitude for their repetition, and whose complex mechanics of numbers, positions and motions, with their nature to become, are the sole causals of all power, difference, sameness, continuance and change, whatsoever that science has yet discovered.

Life! How and under what circumstances can we conceive life to arise? I do not believe in hylozoism, though this would be an easy explanation of the phenomenal universe, with some other as arbitrary assumptions, if it should be held that the intelligence of every particle of matter is all comprehensive, with the universal agreement among them, with power to execute, that all events and changes should transpire when and as they do transpire. It would serve all the convenience of a quietus upon thought-exercises under difficulties, as does the untenable assumption of infinite intelligence and power massed in a personality and placed either in every point of space and atom of matter, or apart and distinct from the universe, but exercising in and upon it, directly or indirectly, all its phenomenal changes. In some sense life may be said to be potential in matter that has become certain states and forms, as capable under some further changes and circumstances, to develope or evolve the function and property of life. But only a few, not more than twelve or fifteen of the seventy or eighty of the known forms and states of matter, has the chemist found to take any part in producing or sustaining life.

Therefore life cannot be said to belong to, or to be a property of matter itself. And matter as substance, is that which exists by itself, is not a product, but stands under all things that become and cease to be; is that which receives modifications, performs function, evolves property or results in something else; but is the unbegun and eternal unwasting quantity which is neither, but presupposes space and time, and whose mode of existing is motion, which is universal energy or force, and makes possible all becoming and ceasing. It is matter that is alive, that is conscious, that thinks and feels; is the flower, the fruit, the tree, the animal, the man; that dies and lives again. But these statements will be denied by many, perhaps by the majority of present-day thinkers and non-thinkers, for they are in harmony with our religious teaching which largely overrides and dominates the scientific, without being itself scientific. Life has its approaching initiative in physics and chemistry, and is no more a non-commenced and endlessly enduring entity, and has being in and of itself, than is water or the globular form of the earth. The analogues of life and its developments are the properties of chemical combinations in their genesis. Water is the form and has the properties, not of oxygen or hydrogen as gases, but of their mechanics when in chemical union. Chemical combinations are conceivable only as constructions of matter in certain interrelated positions and motions. And here are our only data for all the emergent properties of the combinations of the seventy or eighty different kinds of atomic matter. And these and their properties according to the present foremost scientific outlook are but the interrelated positions and motions of infinite numbers of one undifferentiated matter. To put it as a universal proposition: all differences of phenomena whatever, including the conscious perception thereof and reasoning thereon, result from the mechanics of infinite number of pieces of one homogeneous matter in motions. The order

and cause near or remote of the phenomena of inanimate and animate nature are not determined by, or take place through, intelligent initiative purpose, or proceed or result through means of intelligent power. Intelligent power and purpose in the universe as we know and feel such power and purpose to be, in and through the matter of our bodies (and we cannot intelligently affirm any other) are but infinitesimal marks upon the universe. There is no evidence sufficient to warrant belief that conscious intelligence will and ability to think belongs to an *immaterial* entity, called spirit, located in our bodies but exists independently of them, and constitutes the real self or I, which appears to be the prevailing religious teaching. This is not intended to antagonize what has been previously said, except as to the immaterial entity, of which we know nothing and is but a negation of matter. If our personal life continues after the dissolution of the body and in spite of it, it is much more probably living matter that has been wrought upon by the present living organism and cosmic forces into a state and form adapted to retain life and its power to think and act, not possibly a hundred years, but indefinitely, under an environment different from the present. But intelligence is the grandest as it is perhaps the latest of nature's great achievements, the partial and advancing knowledge of itself, emerging from and embodied in its most complex groupings of matter and motions. Then can we say that nature has evolved a false consciousness of herself; that she has not made herself known to herself as she really is, but only as she is not; has not presented herself to herself, nor stood forth in the illumination of intelligence to be what she has declared in universal undertone, *viz*: that she is and must everywhere be, *intelligible*, because everywhere interrelated in her substance in definite positions and motions? For in the warp and woof of her very self, cast into the web of her forms and their functions there must be involved not only a form

and pattern, but her very self. She cannot self-impeach herself in heart and deed to her very heart and deed. Nor on the other hand has nature constituted human intelligence in its past and present feebleness of grasp and infinitesimal reach, and in its sum holding the merest fragment of nature's intelligibility, competent to say (and this the last word) if there were no sensitivity, that is, had not nature developed a sensitivity of itself in itself, there would be neither space nor time nor objects: "that nature has to conform to our aperception, nay, is dependent on it, with respect to her laws." (*Kant*) There is a profound truth in the apparent absurdity that nature must conform to our apperception, that is not in harmony with Kant's philosophy, *viz*: that as nature has caused its self-recognition it cannot be otherwise than she has adapted her self-intelligence to her intelligibility. But nature's activities, except a few by the higher orders of animals, take place without evidence of initiative or directive intelligence either in the activities themselves or remotely from them. But there must be reasons why they do so, and these must be intelligible, albeit not yet all fully discovered. The story goes that it became a question with Newton why an apple should fall from the tree where there was nothing to prevent it. And his discerning intellect after a while saw that the answer to this question involved reasons why a ball rolls down an incline, a stream of water runs down hill or revolves a wheel; why tides occur, bodies are heavy, a pendulum vibrates; why the earth follows an orbit around the sun, the moon around the earth. The solution of the problem resulted in the discovery of a fact universal to the solar system, and by strong legitimate inference also applicable to the material universe; *viz*: a tendency to self-aggregation of all matter, expressing itself quantitively as a force, directly as to masses, and inversely as the square of the distance separating the masses whether atomic or molar. This is called universal gravitation, and its truth

is demonstrated by mathematical proof. "It can be neither produced nor destroyed, it is neither hindered nor strengthened by any intervening medium. Gravitation is the force which keeps the world going." The universal tendency of matter to seek centers is proof that motion is the universal mode of existing of matter. The Newtonian third law of motion is that action and reaction are equal and opposite. Therefore universal gravitation can never eventuate in all matter finding one common center, and the inertia of absolute rest become realized. There is then the universal tendency of matter to disperse or diffuse itself from centers. It is held that atoms of matter do not touch each other; that there is room for the ether of space and for motion among atoms themselves. One of the motions that separates matter from its aggregations is heat. Gravitative motion draws matter together,—concentrates it. And by this very process generates heat which antagonizes the results of gravitative force without in any degree cancelling its tendency to come together, according to the present teaching of physics. The arrest of molar motion becomes molecular motion which is heat, and tends to the repulsion of matter concentrated. The universal, and if universal, then we may say the necessary, property, affection of nature of matter is to be in motion. "Of absolute rest Nature gives us no evidence; all matter, as far as we can ascertain, is ever in movement, not merely in masses as with the planetary spheres, but also molecularly, or throughout its most intimate structure; that the force cannot be annihilated, but is merely altered in direction or character." *Prof. W. R. Grove, in The Correlation and Conservation of Forces.*

It may be said comprehensively, that all knowledge or science ultimately concerns matter, energy or force, their products and conditions. Energy or force, is action, operation, exercise, work; in a one word, *motion,* everywhere and always either active or potential. The world,

the universe, is a material system. "The total energy of any material system is a quantity which can neither be increased nor diminished by any action between the parts of the system, though it may be transformed into any of the forms of which the energy is susceptible." *Clerk Maxwell in Matter and Motion.* "Conservation of Energy or Force, means that the energy of the universe is constant, no energy being created or destroyed in any processes of nature; every gain or loss in one form of energy is a loss or gain in some other form or forms. Correlation of energies or forces is the transformability of one form of energy into another." *Century Dictionary.* "The Conservation of Force is the highest law in physical science which our faculties permit us to perceive." *Farady in Correlation and Conservation of Forces.*

Energy or force, in the last analysis and the most discerning and discriminating view is *motion,*— matter in motion. The mathematical definition of energy is: "half the mass into the square of its velocity is termed its *actual energy* or *energy* of *motion,* that is, its *Kinetic activity;* while the quantity to be added to the sum of the actual energy in order to obtain a constant sum is termed the *potential energy,*—that is, the latent or slumbering activity, or *energy* of position; the constant being termed the *total energy.* The corresponding general principle of physics is that the total energy of the physical universe is a constant: this is the principle of the *persistence* or *conservation* of *energy.*" *Cen. Dic.* I think sufficient evidence has been adduced to show that the scientific conception of energy or force is motion, is matter in motion and nothing else, and its quantity in the universe is a constant sum; as by implication from this showing the sum of matter must be also constant. "Just as matter may eixst in so many different forms, so may energy: Kinetic Energy. Gravitation Energy, Heat Energy, Energy of Elasticity, Cohesive Energy, Chemical Energy, Electrical Energy, Magnetic Energy, Radient Ener-

gy.'' This list comprises 'forms' of energy, not different energies, for the reason that they are one and all interconvertable. They are different phases of one thing, not different things.'' *Prof. Robert Kennedy Duncan in The New Knowledge.* These different energies are species of one genetic energy,—motion, and are names of different aspects of nature, and all express the mechanics of matter in definite positions and motions, or laws of operations and consequent results. Law, all laws of nature, are nothing but expressions of interrelations of differences. Does law involve the necessary implication of an antecedent law-mark as other than, and independent of, the interrelations expressing the law? By no means, except on the gratuitous and therefore foolish assumption of the creation of the material universe. In that case there must arise the supposition of an antecedent creation of the necessary conditions, the abstracts of matter, its motions, and its interrelations,—space and time, which are the underlying and necessary presuppositions of the mathematics. But as no sane person, intelligent along these lines of reasoning can admit that these validities which condition the material and operating universe, can by any possibility have come into being, do not exist as does the matter of the universe, but condition, and are presupposed in all possible existence; for existence must be somewhere and change in some time. And these necessary truths have all the certitude for external authority that they have for internal, and internal because they have for external. For the internal has been and comes from the external. If these abstract truths must always have been, why not matter have always existed? They seem parts of one unoriginated and undissolvable whole. Or if matter was created and set in perpetual motions, without renewing cause or diminishing action, the creative acts must have conformed to these necessary conditions as ours do. Therefore the creator is not supreme, but was obliged by a necessity above and beyond his

power. And if he is, and is eternal and not himself created, what he is and has power and will to do, he is so inevitably and by the eternal fate of his existence and nature. And the creator of the universe no less than the uncreated universe, must be held to contain within himself by virtue of his eternal existence, all the possibilities, actualities and certainties that ever have occurred or ever can transpire. It seems to me that this is the verdict of reason upon the subject of eternal and uncreated existence, whether it be the universe or the creator of it, as the first and necessary postulate. So there is no advantage in the attempt to set the primal postulate in a transcendental, but an immense disadvantage. Since a transcendent of the universe is not an axiomatic, not a possible conception, not a needed averment, or a provable proposition, but an impossibility in thought and an absurdity to intelligence and reason.

Discussion 34. It is reported that Lord Kelvin has said that no explanation of the origin of life is conveivable, save that which refers it to the special act of a personal God, and that science absolutely demands creative power. Not a biologist came forward to support these propositions, says Saleeby in Evolution The Master-Key. Both these statements are assertable, but I submit neither of them are conceivable,—capable of becoming truthful mental images of what they are intended to convey as historical events and causes of them. Probably on some fit religious occasion the words came welling up from his religious consciousness, the product of his nursery teaching, and not the conclusions of his mathematics or his scientific discoveries. He cannot have discovered the creation of matter or the divine origin of life, or the need to avow such propositions except in the religious mood. Here they belong and not to verifiable or inferential science. The noble Lord must be religious. The sovereigns of England whose government propagates Christianity, creates no religious sceptic Barons, how-

ever much scientific or practical benefit they may have conferred upon the world. Science knows nothing of the creation of matter. It is not a problem that comes within the domain of any science. And the favorable theological opinions of great scientists have no special probative value for theology. Sir Isaac Newton was not a success as a theologian, though he wrote *"Observations on the Prophecies of Daniel"* and the *"Apocalypse of St. John," "Lexicon Propheticum, a History of Creation,"* and other books. If he had proven creation as he did universal gravitation, the sharpest and most persistent contention would be set at rest. There is resting upon the alleged creator the impossible task of bringing into evistence from non-existence the material universe, distributing matter throughout space, bestowing upon it motions, and ordaining the aptitude to all its combinations, and the emergence of all properties. All these details and infinitely more, must the supposititious personal creator be charged with. If a greater absurdity can be conceived or expressed in language than the creation of the universe, I know not what it can be. Its history shows childish simplicity in its allegation and the strength of manhood in its support.

It is not surprising that creation and the God-producing idea of all phenomena should be the first and easy persuasion of dawning intelligence. To the childhood of the race as to the individual child of to-day, all statements are equally true. Creation presents no difficulty to thought or execution of the child, and can be as easily done as Uncle John can make a sled for the boy for ought childhood knows. The race had become widespread and had acquired some intelligence by observation and in doing of first things, especially in architecture, before any radical distinction had been discerned in conception and act, between creating and making or forming. Indeed, the distinction is not foremost in the minds of uncultured today, as is evident from the fact

that the latest and most pretentious dictionaries retain and do not brand as obsolete, "to make or form" as one definition of "create." And it seems credible enough to the child, and to the man without, but the child within, that intelligence and power like his own but greater, could and did, create or make, the world and all things. For God is man-like, or man is God-like, since man is made in God's image or likeness. And such is now taught the child and the adult everywhere in Christendom. When a man begins to realize how curious, orderly and beautiful all things are, especially the flowers and vegetation, and how the corresponding parts of the same kind of flowers and vegetation are alike in form, number and coloring; and how differing things, wide apart perhaps in space, are mutually adapted to each other for some ulterior end, and will reach each other, which may be now remote in time, days, months or years, there arises the persuasion of design and purpose with power to execute on the part of the alleged being whom he has been taught had done and is doing all things, either directly and miraculously, or indirectly through the laws and nature with which he had endowed all things. And there is begotten the emotion of wonder and worship. For where there is no wonder there is no true worship. This is a fascinating enjoyment when well pronounced, and is painfully shocked when it encounters scepticism or denial of the objective reality of the premises on which the subjective conviction and emotion rest. Presumably it was the same kind of evidence and emotion that called forth from one of the Herschels, on contemplating the relative positions and orderly ongoing of the heavenly spheres, the expression, "The undevout astronomer is mad."

But since the creation of the universe in scientific expression has become obsolete and ever was impossible as a true conception or mental image, and has given place to the conviction of its eternal existence, and all

changes and events which ever have occurred or ever can take place were from eternity and of necessity implicit in the eternal substance, its motions and interrelations; as in consistency of reason the creation of the universe and all it unfolds must be held as implicit in the supposed creator in virtue of his eternal existence and nature; and the implicitness includes volition and will. But we do not find ground in our experience, nor are compelled by the necessity of reason to postulate that volition and will have power absolutely to create objective, concrete, perdurable substance. And no ascriptions of praise or emotions of worship arise on beholding the beauties and order of nature and invest themselves in a clear and distinct and adequate personal being as cause thereof, because we have no scientific insight that such is an historical fact. These assumptions are not necessitated, but are arbitrary. And in our emotions we drop down to the childish standard of wonder to what we do not understand, and we become worshipers of our own ideals. This and nothing more. Nor is the old saw longer available, "All things had a beginning, therefore they had a Creator." Then creator had a beginning and a creator. If the creator of the universe is without beginning and involves all the universe means and its creation besides, why may not the universe be without beginning and so without a creator? The feeling of wonder is marked in persons susceptible to this emotion, on contemplating the harmonious adjustment of differences to some near or remote end, and this as means to other end, and among the intermediary ends, the being and welfare of the contemplator himself, and the adjustment stretching on and including the universe of infinite differences in one system of being and activity. The emotion of wonder and admiration at all one cognizes, with the feeling of gladness that he is, that sentient and intellectual apprehension, reason and personality have become objective and subjective and centralized in and constitute his in-

dividuality and consciousness separate and apart from any other. And the interchange of thought, sentient conviction and friendly act, with another, like himself, may yield most exquisite satisfaction and enjoyment, with an environment adapted to minister continually to his wants and well-being. Glad of parentage that has bequeathed to him a vigorous, symmetrical and healthy body and a normal and active mind. And this emotion of wonder and gladness and the dwelling in harmony with nature of which he feels himself to be the product in every sense of the word—is religion, natural religion. It binds to, receives from and identifies the self as part of nature. And the worship is of, and returns to, the universal and eternal source of all that becomes. All of our knowledge is of the universe or nature. We have none whatever of an impossible supernatural, a word which has no realizable meaning. For we cannot transcend in thought the universe. This feeling of worship of nature, was pronounced in Spinoza, if his life and bearing were such as justified Novalis in declaring that "Spinoza was a God-intoxicated man." But his commentators say that "Spinoza's philosophy was a thoroughgoing pantheism." And a pantheist is one who believes that God and the universe are identical.

Discussion 35. There is a legitimate natural religion. But every theology is fictitious. To love, harmonize with and feel one's entire dependence upon nature—nature from which the God-idea has been eliminated, is to worship nature. And this objective of worship is not lost in a vague subjective state or ideal being, which, indeed is no true ideal,for confessedly a being transcending the universe in space and time, substance, action, property, power, phenomena, comprehensiveness and any other namable and provable quality, is inconceivable, and hence impossible of presentative idea; but nature has an obvious, rational, experiential and necessary objectivity, for all thinking and feeling comes

within the domain of nature of the universe, in which to realize and centralize worship.

Andrew Seth, in the Encyclopædia Britannica, says: "Spinoza's philosophy is a thoroughgoing pantheism. The foundation of the system is one infinite substance. God is the imminent cause of the universe; but of creation and will there can be no question in Spinoza's system. God is used throughout as equivalent to nature. The philosophic standpoint comprehends the necessity of all that is—a necessity that is none other than the necessity of the divine nature itself." It is recorded that "After the death of his parents Spinoza transferred his share of the estate to his sisters." His friend Simon de Vries wished to make him heir to a large estate. But he persuaded him to leave it to the donor's brother, to whom it more reasonably belonged." Spinoza lived and died in poverty, ostracised by relatives, and by Judaistic and Christian religionists. Atheism in his day was held as a monstrous criminality, by self-appreciating virtue. I believe there is here, in the affirmation of God and the universe a duality of conceptions that cannot be merged in identity of conception. And pantheism is neither an objective nor subjective truth. We can affirm no real, objective, necessary, conceivable or provable existence, transcending the universe, or imminent therein, but not of the universe but its creator. There cannot be one identity so utterly disparate as creator and created. Identity is defined: The state of being the same; absolute sameness; the relation which any thing bears to itself; identity belongs only to the individual, thing, being, etc." An author defining pantheism, identifies the universe with God and calls it akosmism. But "akosmism is the denial of the external world, according to Dan Mansel." And identifying God with the universe is atheism, that is, the denial of God. It is impossible to identify the two conceptions. And to deny the objective existence of the material universe;

that of which we have the evidence of our senses and reason; that which our constant experience deals with, and is the subject-matter of all the exact science's; that which we practically live in and by, and cannot sanely deny; that we cannot live out of, think out of, get out of, or beyond, seems madness. And affirm as an objective absolute, and most real existence, that of which or of whom, by confession of those who make the affirmation, we can have no true conception, no evidence of sense, thought, or experience that can be verified and so proven to be an objective existence, is of all absurdities the most absurd. If matter is as experience and our science declare, and is eternal, self-existing, and self-moving as the primal postulate and sound philisophy declare, and why should it not be; something must be and exist and is everywhere moving. And nothing is known or conceivable or of necessary affirmation, that did or could have put matter into universal motion and maintains it in the exact order of positions and motions, without loss as a whole. That the world exists and is different from myself that makes the allegation has the full measure of certainty to me, notwithstanding its denial by the idealist, that I exist, for I have the consciousness of the other and myself in one indivisable act of consciousness. The conscious self has all the conviction of certainty of the not-self as of the self. I have no evidence, not the least, that matter began to exist, that it was, or could be, caused to be from non-being.

The critical scientist sees nothing in matter or his experience with it, not even its disappearance beyond his detection, or its appearance where he cannot clearly and distinctly see how, as water from two invisible and intangible gases, with properties so unlike the gases, that legitimates to him the inference that any matter has come into or gone out of existence, or that it ever was created. In what sense is there, or is there need, to affirm a creator?

The necessity of eternal uncreated existence as the primal postulate, denies by implication the necessity and even the possibility of creation, and hence a creator. Creation violates the logical principle of the law of parcimony—that we are not to suppose the existence and causal operation of anything not necessary to account for admitted facts. The existence of the material universe as distinct and other than our thought of it, can only be denied verbally and never consciously. And the creation of the universe from non-existence and therefore a creator of it, can only be affirmed verbally, and never consciously, or of necessity, or from adequate proof. And here the materialist and non-creationist, the advocate of the eternal uncreated self-existing, self-moving instead of self-quiescent, and the evolution of all actual and possible properties, life and mentality, from matter and by matter and its necessary conditions of existing phenomenating space and time, might rest his case, as against the creationist, the creation and hence the creator of matter and the endowment of its energy of motion, of properties, of life and mentality. An author says: "A favorite piece of apologetic juggling is that of first demolishing Atheism, Pantheism, Materialism, etc., by calling upon their advocates to explain the mystery of self-existence, and then tacitly assuming that the need of such an explanation does not appertain in the case of Theism, as though the attribute of self-existence were more conceivable when posited in a Deity, than elsewhere." That is, as though the creation of matter from non-existence, and therefore its Creator, were a self-evident proposition, and its expression involves its truth; or its truth were so manifest that to call it in question is fully explained when reference is made to ignorance of what is so palpably and generally known. And the eternal uncreated existence of matter were a contingent proposition and must be extrinsically proven. While matter is the only existence

known to persist in unchanging quantity. It is said that "In the whole Sanscrit language, the classical primitive language of the Aryan race of men, there is not a single word which signifies 'to create' in the sense of the Semitic or Christian dogma." Creation of matter is so utterly inconceivable by cultured intelligence as to render its first suggestion by such intelligence improbable. The dogma of a revelation by ignorance is its source.

Discussion 36. It is plain that the Creator cannot be identified as one with his creation, declared to be the universe. This would be either self-creation, which is self-contradiction, and the implication that the creator was created, which denies his eternity; or denies any creation at all. And in either case denies a transcendental of the universe as an existing difference.

To say that God is one and indivisable, not part in one place and part in another, but whole and entire in every place, or whole and entire only in the infinitude of places; that his omnipresence, omniscience and personality, are infinitely co-extensive, and co-intensive; that he is independent of space and time, or dependent on these validities; is independent of, and other than, the material universe, or identified with it, is creator of all things, is imminent in all things and other than all things, is to utter verbalities as monstrous in their self-contradictions as they are impossible of mental picturing or intelligible affirmation. Evidently scientific intelligence cannot aver creation or creator. As already pointed out, the primal necessary affirmation is eternal uncreated existence. And having existence of inevitable necessity given in unavoidable presupposition, creation and creator are illegitimate, superflous and absurd. Given: space, time, matter and its motions, and all else is implicit therein— mechanics, mathematics, suns and their planets, physics, chemistry, life, plants, animals, men, myself and what I am now writing, and whatever else there is or can be. An author says: "There are only

three 'verbally intelligible' theories of the universe, viz: that it is self-existent or self-created, or created by some other and external being; that the first of these theories is Atheism, the second Pantheism and the third Theism." Now I submit that self-creation is not 'verbally intelligible.' For what is verbally self-contradictory and therefore absurd, is not intelligible. Since self must be presupposed already in order that self can be alleged to have a creator, and therefor to be created. Pantheism, the word, literally means all God, and may well enough stand for worship of all the Gods, as the supposed service at the Pantheon in Rome, before Christianity had introduced a service not contemplated by its builders, and has no reference to self-creation or creation at all. And as the dictionary defines Atheism, the word implies rather the disapprobation of the speaker than any very definite opinions.

The primal postulate of eternal self-existing and self-ongoing existence, is assumed by theism as by atheism. Atheism consistently and of necessity is seen to be involved in this postulate. All that becomes must be from what has eternally been, and must be evolved therefrom. And it identifies as its postulate, space and time, matter and its motions, and all natural implications, giving the indestructibility of matter and the persistence of force; as that which always has been, and therefore must forever continue to be, from which all that becomes proceeds. Theism has no standing even in its own judgment, unless it opposes to what it must assert the contradictory and needless affirmation, creation, and by implication, creator.

It is now incumbent upon it to point out and distinguish what is eternal existence and what created existence. And it has elected to say, that all the existence of which we know anything from any power of cognition which we possess through sense, truth that is involved in its verbal expression, necessary inference or reasoned

conclusion, viz: the material universe, is created existence. And the creator is he (for theism insists that its creator is manlike and of the male sex) of whom we can have no natural knowledge whatever, not even a mental image that shall satisfy the human demand of what the creator of the universe must be to be its adequate creator. *And it rests its case for proof on hearsay,* without proving the competency or integrity of its witnesses. This is its evident and everlasting defeat. For nothing is more preposterous than the claim that the material universe is a created thing and its creator distinguished by the evidence of verbal or written testimony concerning some spectacular or spectral appearance. Nothing could be evidence of the creation of matter but its absolute creation. And no hideous or lovely aparition even should declare itself to be the creator of the universe, could be adequate evidence of it. And no deed done however marvelous, but the creation of matter itself, could warrant the inference that the doer did or could create the worlds of matter, or a single atom. Theism, in its two claims of the creator of the universe, and the specific creator of it, is absolutely without the power to adduce any evidence of either. But theism holds the contrary very tenaciously. A well known argument, perhaps first constructed by Prof. Clerk Maxwell, is his presidental address before the British Association, 1870, and runs as follows: (I do not quote directly from the first report of it, but from a citation of the report) "None of the processes of nature, since the time when nature began, have produced the slightest difference in the properties of any molecule. We are therefore unable to ascribe either the existence of molecules or the identity of their properties to the operation of any of the causes which we call natural. On the other hand, the exact equality of each molecule to all others of the same kind, gives it as Sir John Herschel has well said, the essential character of a manufactured

article, and precludes the idea of its being eternal and self-existent. Thus we have been led along a strictly scientific path, very near to the point at which science must stop. Not that science is debarred from studying the external mechanism of a molecule which she cannot take to pieces, any more than from investigating an organism, which she cannot put together. But in tracing back the history of matter, science is arrested when she assures herself, on the one hand, that the molecule has been made, and, on the other, that it has not been made by any of the processes we call natural."

The assumption of creationism is that the universe of matter and energy, and change, and the necessary presuppositions,—space and time, are created products from non-existence and non-being. I am not aware, however, that it has directly and in form assumed the creation or determination from non-being of the universal and necessary validities of space and time, or that opposers of creation have demanded the accounting for these validities as involved in the problem of creation of the universe. They certainly cannot be declared as no part of the universe, and as certainly must be declared as entering into the problem of its creation. If it has not occurred to creationists, nor been suggested by deniers of creation, that these antecedent conditions to the possible creation or existence of matter and change, are essential points in the problem, it is time that it should be. For if there has been creation of positive concrete matter, and this coerced into related motions and positions, and orderly sensible changes are occurring, there must be the abstract, pre-supposed *where* and *when*, i. e., space and time, that underlie as antecedent conditions of creation of matter, as well as the *how* of creation and by *whom*, the impossible feat of the creation of all things has been effected. The presuppositions are as exterior to, independent of, and cognized by, our sensibilities, as is matter and change and intellectuality cognized as the uni-

versal and necessary determinants of the order of all that exists or becomes. To say that time and space have no external objective validity, is virtually to deny the objectivity of the external world, and consequently its creation. The order of matter in its related positions and motions, and consequent products and events are taken from the domain of the contingent by the necessary orders involved in space and time, and placed in the domain of the inevitable, as appertains to what becomes as to what is eternal. And the universal order of posited and moving things and occurring events in nature, so much relied upon by creationists in their contention that order needs a separate orderer, that is, that wherever there is the law of regularity or order, there is implied the intelligent law-maker. This can only be sustained by proof that the validities involved in space and time, have been created or brought into being from non-being. For instance, that two parallel lines never meet or further diverge; that the three angles of a triangle are equal to two right angles, no more nor less; and the straight line is the shortest distance between two points, and all axiomatic relations were made to be so by an intelligent and sufficient law-making personality; and are not unordained truths involved in what creationists and noncreationists alike agree is eternal, uncreated and unordained.

Discussion 37. It is doubtful if any rational scientific intelligence can be brought to the candid considerate conviction that the validities which constitute space and time as place and duration of all that is or can be, and measures of the same were ever caused to be or can deny that they *are* independent of whether there is anything to occupy space or event to occur in time; or thought to cognize their universal and inevitable truths, or that there is or can be anything or being, thought or acts, out of their domain and beyond their interrelating and order-obliging power. No matter can be posited and

thought detect it as beyond the range or too intricate to be measured by space-interrelations, or events occur however prolonged or instantaneous their duration, that were before, or are not exactly measured by time-interrelations. All things and events are intelligible, because the universe is in ordered self-interrelations, and this because it cannot be otherwise and not because it was made so by a fore-ordainer.

This might well be allowed by the pantheist whose God is one and the same as, and not different from the universe. In his persuasion there is and can be no bona-fide creation. Self-creation is self-contradiction in terms, impossible of thought and of realization. For the self which is the creator of the same self is presupposed in existence already, in order that there can be the creator. And how can a creator which already is, create himself which already *is?* Christian theism (there is no natural theism, unless pantheism might be so called) affirms a universe of real concrete existence occupying space, and of events filling time, and of force or movements of matter, and the creation of matter *ex nihilo,* by a creator as actual and real as matter though denied to be material or of the stuff of matter. It is the creation of the real material forceful phenomenal, Space and Time universe, that Christian theism affirms and atheism denies to be created. The complete and satisfactory vindication of theism must involve not only that the universe was caused to be and to exist when and where it was not and never did exist, but *how* as well as by *whom* created and caused to be. The by *whom* created cannot be inferred even should matter involve the necessary inference of its creation. "In tracing back the history of matter," says Prof. Maxwell, in his argument cited above, "Science is arrested when she assures herself on the one hand, that the molecule has been made, and on the other, that it has not been made by any of the processes called natural." The language here used has no direct reference to

the creation of the stuff of which the molecule consists, but only of its form. He is supposed here to refer to the unalterable fixity of form and nature of the chemical atoms of the same kinds of matter, of which there are some seventy or eighty different kinds, and these kinds of matter are never changing into any other kinds by any processes of nature. It has been discovered since the lamented death of Prof. Maxwell, that the universal opinion concerning atoms was erroneous. They are now known to be compound bodies made up of bits of matter 1,000 times less than the least atom, and are changing by processes of nature. The minute bits of matter constituting the atoms are called corpuscles and electrons. "The actual unit of matter is not the so-called atom, but the electron, which is really a literal atom of negative electricity. The atoms of the different elements vary only in the number and arrangements of their electrons, every electron, wherever observed, being identical with every other. The stability of the atom depends on the number and arrangement of the electrons it contains. No contemporary physicist believes that such a thing as an absolutely stable atom exists, though some may undergo no apparent change in millions of years. Thompson's theory clearly explains how atoms of one element, by losing their outer ring or ring of electricity, may be transformed into those of another, and it also demonstrates the operation, among atomic species, of the law of natural selection. The atoms with which we are now acquainted,—some eighty or so in number, are those that have survived of many more that have not during countless past aeons." There is likely to be error in language and of conception in the flush of the new knowledge that is revolutionizing the scientific view of the universe. It is hardly true that the atoms are composed wholly of electrons, since this name is restricted to the corpuscles or electrons which Prof. Ramsey calls atoms of electricity that appear at the cathode. But the negative corpuscles

that appear at the cathode must be balanced by positive corpuscles that appear at the anode. And Prof. Ramsey calls these matter. They behave themselves very differently from the cathode particles. "Prof. J. J. Thomson has found a way to measure the speed of these cathode particles, their weight or mass as well, in a word, to demonstrate that they are real. They seem quite wonderful, for they are the smallest things known to man, and it may be that out of them the universe is made." "Where the chemical atoms offer an engaging variety, with the electrons there is none at all. Whatever be the source from which they spring, whether they come from air, from hydrogen or carbonic acid, or from metals, as from lead or gold, they seem one and all the same. Has the physicist reached at last the primal matter, the ultimate basis of all existing things? This, it would appear, is Prof. Thomson's own view, for already he has begun to utilize his electrons to explain the composition of matter, and even the nature of electricity. The most remarkable fact is their sameness. It would seem as if the variety and chemical differences of the atoms were due simply to the number, the motions, and positions of bits of primal matter, identical among themselves. In this way we should have an explanation of chemical phenomena."

"We believe—we must believe, in this day, that everything in the universe, of world and stars is made of atoms in quantities, x, y or z, respectively. Men and women, mice and elephants, the red belts of Jupiter and the rings of Saturn are one and all but ever shifting, ever-varying swarms of atoms. Every mechanical work of earth, air, fire and water, every criminal act, every human deed of love or valor, what is it all, pray, but the relation of one swarm of atoms to another. Here, for example, is a swarm of atoms, vibrating, scintillant, martial—they call it a soldier,—and, anon, some thousands of miles away upon the South African veldt, that swarm dissolves,—dissolves, forsooth, because of another little

swarm,—they call it lead. What a phantasmagoric dance it is, this dance of atoms! And what a task for the Master of the Ceremonies. For mark you the mutabilities of things. These same atoms, or others like them, come together again, vibrating, clustering, interlocking, combining, and there results a woman, a flower, a blackbird or locust, as the case may be. But tomorrow again the dance is ended and the atoms are far away; some of them are in the fever germs that broke up the dance, others are the 'green hair of the grave,' and others are blown about the antipodes on the winds of the ocean. The mutabilities of things, and likewise the tears of things, for one thing alters another,

> Like snow upon the Desert's dusty Face
> Lighting a little hour or two—is gone,'

and the eternal, ever-changing dance goes on." So it cannot now be said: "None of the processes of nature since the time when nature began, have produced the slightest difference in the properties of any molecules. We are therefore unable to ascribe either the existence of the molecules or the identity of their properties to the operation of any of the causes which we call natural." These statements are definitely negatived by advance in physical and chemical science since the time Prof. Maxwell uttered them.

Discussion 38. "The exact quality of each molecule to all others of the same kind," is tautology. One could not be different from another and be strictly of the same kind. But is it essential to manufactured articles that they be all of the same quality, or all of the same kind? And is it the essential character of "eternal self-existence," that it should be everywhere differing in itself, and sameness precludes the idea of eternal self-existence? Such seems to be the force of Prof. Maxwell's reasoning. We rather feel that sameness in form and quality of all primal stuff; or in other words, if science has reached a material entity in which all difference in heaven and

earth, is absent except numerical, this indicates not manufactured or created, but the eternal self-existing existence that the primal assumption necessitates.

There can be no antecedent or final cause, purpose, or design, involved in eternal uncaused existence. For there is no antecedence possible. But it must involve of necessity all existential, ontological, potential, logical and active, cause of all that becomes in infinite space and time, the all comprehensive whole of unchanging quantity, whose ever varying changes of interrelated positions through affinitive and repulsive motions, matter's universal mode of existing, and account for all phenomena, including living and intelligent beings. While these vary in number and in quantity of intelligence, and they become and cease to be, now are, and anon are not, neither they nor intelligence nor its like can be the unchanging quantity that is, ever has been, and consequently ever must be.

No words are so destitute of meaning, so impossible to what they allege, so preposterous, as the absolute creation of the material, space and time universe. But with many this impossibility is turned to easy and accepted faith by the simple expression,—"God created the heavens and the earth." And so general is this faith among Semitic peoples and their Aryan converts through near 2,000 years of persistent teaching, involving as it has come to involve all over Europe and the Western Continent and parts of Asia, the interests of national governments, educational institutions, professions and social dignities and common workers for daily bread, to support and propagate the absurdity of creation by a personality as extended as space and co-eval with time, while there is no knowledge of the creation of matter nor any that of necessity inferentially supports the allegation. So universally is creation impressed upon our childhood, that when in after years by scientific enlightenment and reflection we come to realize that

there must be eternal and uncaused existence, and become familiar with scientific expressions,—"The indestructibility of matter and force," or in the words of Prof. Helmholtz: "Nature as a whole possesses a store of force which cannot in any way be either increased or diminished. And therefore the quantity of force in nature is just as eternal and unalterable as the quantity of matter. Expressed in this form, I have named the general law, "The Principle of the Conservation of Force." And when we have identified the necessity of the mind within us and the whole of things without us,—the matter of the universe and its necessary mode of existing in motion as indestructible force, and because there is nothing else with which to identify it, the early impression of the creation of the world asserts its denial. And as creation is an act and had a beginning, there must be the actor or creator. And the necessary eternal uncaused existence becomes the supposititious creator; not of the proven or necessary premis of creation, but of our easy childish persuasion. And this persuasion has determined and still dominates our forms of government, institutions of learning and social life. Probably no one is more strongly convinced of the fixedness of the quantity of matter and force in the universe than was Prof. Maxwell. But his early training and religious feelings gave character to many of his scientific expressions. The same may be said of Faraday, Lord Kelvin and many others. Creation is a religious and not a scientific notion, and carries us back to fetichism and idolatry; that is, to our childhood, and childhood lingers in us tenaciously. Hence the religious prejudice of Prof. Maxwell lead him to use language favorable to his religious faith, but supports it by no scientific reasons, because there are none. In his article "Atom," in the Encyclopædia Britannica, Prof. Maxwell says: "Science is incompetent to reason upon the creation of matter itself out of nothing. We have reached the utmost limit of our thinking faculties when

we have admitted that, because matter cannot be eternal and self-existent, it must have been created. It is only when we contemplate not matter in itself, but the form in which it actually exists, that our mind finds something on which it can hold. That matter, as such, should have certain fundamental properties, that it should have a continuous existence in space and time, that all action should be between two portions of matter, and so on, are truths which may, for aught we know, be of a kind which metaphysicians call necessary. We may use our knowledge of such truths for purposes of education, but we have no data for speculating on their origin."

There are statements in this quotation that seem destructive of each other. "As science is incompetent to reason upon the creation of matter out of nothing," it may be asked, by what process "of our thinking faculties" have we come "to admit that matter cannot be eternal and self-existent?" The admission is that matter itself, neither our scientific experience, furnishes grounds of reason for the creation of matter. By what means then have we come to say that "*because* matter cannot be eternal and self-existent, it must have been created?" There must have been some decisive reason for the positiveness of this expression. It is denied to be found in the competency of our faculties to reason upon the creation of matter out of nothing, and "we have no data for speculating on its origin." Then it must be found outside of our faculties of reasoning and beyond all "data for speculating on its origin." That is, its creation is not a reasonable ground to take. Then from whence comes the "because it cannot be eternal and self-existent?" I see no ground for it except his strong religious faith resting on biblical authority. And I think it is true that in any argument sustaining the creation of matter, the evidence relied upon and most tenaciously held to, is the Bible statement: "God created the heavens and the earth." And further, I see no reason for, and doubt if

there are persons of a scientific training, before coming within the fetichistic entanglements of theology and the religious consciousness, who allege the creation of matter for any scientific reasons. And certainly it cannot be maintained on any scientific or psychical grounds. For as Maxwell says, we have no faculties competent to reason upon the creation of matter out of nothing, and we have no experience that favors the allegation. It is merely a religious notion, resting on some *ipse dixit*, of no more authority as a matter of fact, than would be John Alexander Dowie's, if it took its origin from him.

"The Gods formed the starting-point, beyond which no man thought of looking. It was the glory of bards and story-tellers to be able to satisfy those religious and patriotic pre-dispositions of the public which caused the primary demand for their tales, and which were of a nature eminently inviting and expansive. We shall hereafter reach a time when philosophers protested against such identification of the Gods with the more vulgar appetites and enjoyments. To understand properly the Grecian myths, we must try to identify ourselves with the state of mind of the original mythopeic age; a process not very easy, since it requires us to adopt a string of poetical fancies not simply as realities, but as the governing realities of the mental system; yet a process which would only reproduce something analogous to our own childhood. The age was one destitute of recorded history and of positive science, but full of imagination and sentiment and religious impressibility. From these sources sprang that multitude of supposed persons around whom all combinations of sensible phenomena were grouped and toward whom curiosity, sympathies and reverence were earnestly directed. Nor need we wonder that the same plausibility which captivated his imagination and his feelings, was sufficient to engender spontaneous belief; or rather that no question, as to truth or falsehood of the narrative suggested itself to his

mind. His faith is ready, literal and uninquiring, apart from all thought of discriminating fact from fiction. It is enough that what he hears is intrinsically plausible and seductive, and there be no special cause to provoke doubt. And if there were, the poet overrules such doubts by the holy and all-sufficient authority of the Muse, whose omniscience is a warrant for his recital, as her inspiration is the cause of his success. The poet like the prophet whom he so much resembles, sings under heavenly guidance, inspired by the goddess to whom he has prayed for her assisting impulse. She puts the word into his mouth and the incidents into his mind; he is a privileged man, chosen as her organ and speaking from her revelations. The myth passed unquestioned from the mere fact of its currency. Throughout the whole of "myth-bearing Hellas" they formed the staple of the uninstructed Greek mind, upon which history and philosophy were by so slow degrees superinduced; and they continued to be the aliment of ordinary thought and conversation, even after history and philosophy had partially supplanted the mythical faith among the leading men, and disturbed it more or less in the ideas of all. And Pausanias, even in his time, heard everywhere divine or heroic legends yet alive, precisely of the old type; he found the conceptions of religious or mythical faith coextensive with those of positive science, and contending against them at more or less of odds. The religious and mythical point of view covers, for the most part, all the phenomena of nature; while the conception of invariable sequence exists only in the background. Voluntary agents, visible and invisible, impel and govern everything. History and philosophy, of which the subsequent Greeks were the first creators, never belonged to more than a comparatively small number of thinking men. But when positive science and criticism, and the idea of an invariable sequence of events, came to supplant in the more vigorous intellects the old mythical creed of omni-

present personification, an inevitable scission was produced between the instructed few and the remaining community. The opposition between the scientific and religious point of view was not slow in manifesting itself. In general language, both might seem to stand together, but in every particular case the admission of the one involved the rejection of the other." "Xenophanes, Thales and Pythagoras in the Sixth Century before the Christian era, first opened up those veins of speculative philosophy which occupied afterward so large a portion of Grecian intellectual energy. They were the first who attempted to disenthrall the philosophic intellect from all personifying religious faith, and to constitute a method of interpreting nature distinct from the spontaneous inspirations of untaught minds. It is in them that we first find the idea of Person tacitly set aside or limited, and an impersonal Nature conceived as the object of study. Thales, as well as Xenophanes and Pythagoras, started the problem of physical philosophy, with its objective character and invariable laws, to be discoverable by a proper and methodical application of the human intellect. The Greek word *Physis,* denoting *nature,* and its derivitives *physics* and *physiology,* as well as the word *Kosmos,* to denote the mundane system, first appears with these philosophers. The elemental analysis of Thales—the one unchangeable cosmic substance, varying only in appearance, but not in reality, as suggested by Xenophanes—and the geometrical combinations of Pythagoras, were different ways of approaching the explanation of physical phenomena. They all agreed in departing from the primitive method, and in recognizing determinate properties, a material substratum, and objective truth in nature." *Grote's Greece, Chap. XVI.*

Discussion 39. I have made this long quotation because it sets forth not inaptly and in language more perspicuous and elegant than I can command, my conception of the likeness of the Greek religion to the

Christian in the centuries past and today. For the Christian religion is but the aggravated and schismatical Hebrew religion, cast off and disowned by its Jewish parentage and taken up, adopted, Christianized and sustained to its present enormous opulence and pretentions by its Aryan supporters; in their inceptions in the childhood of development, their assumptions of inspiration from divine beings or being, beyond which no one thought of looking, and the romance of each religion alike satisfying their respective devotees; and all have carried forward their pretentions from the easy faith of childhood loving marvelous tales, before the discernment of either truth or falsehood, into developed manhood, all the time the fabulous becoming more and more established as the real and actual; incorporated into natural life, social life, and individual life. And it is a breach of the civil law and a corrupting of the youth and of society to disbelieve and avow the disbelief in the popular Gods, or in all Gods. And it becomes easier to condone murder and associate with murderers than atheism and atheists. But in the lapse of time, and change, the many Greek Gods and their theogeny have disappeared, and part of Aryan posterity has rejected its racial Gods and religion and adopted the Hebrew monotheism, and the theogeny of one only begotten "God of God," carried over as remains from Greek theogeny. And Christianity was dependent on the Greek language and Greek thought which had been developed and employed to set forth the Greek conception of its theology which Christianity thought to degrade by calling it mythology, yet borrowing its terms and meaning to express its theology. Speaking of the Christian Church about the middle of the third century, Harnack says: "We now really find a new commonwealth, politically formed and equipped with fixed forms of all kinds. We recognize in these forms few Jewish, but many Graeco-Roman features; and finally, we perceive also in the doctrine of faith on

which this commonwealth is based, the philosophic spirit of the Greeks. The Christian Church and its doctrine were developed within the Roman world and Greek Culture. As a consequence of the complete break with the Jewish church there followed not only the strict necessity of quarrying the stones for the building of the Church from the Graeco-Roman world, but also the idea that Christianity has a more positive relation to that world than to the synagogue." *History of Dogma, Vol. 1, pages 45, 46.*

As in the Graeco-Roman, so in the Christian and every other religion resting on the supernatural, there comes, after the juvenility of the individual is passed, if natural things and events come into the foreground of critical observation and reflection, a time of question and denial that all facts and occurrences cluster around personalities or a personality as their cause of being. Vaticinations and dreams are held in Christian theology to be its foundation pillars and now repose in colossal strength and grandeur, challenging the world of reason and sense to overthrow them, and branding the denier of any trustworthy validity in dreams with inhumanity, infidelity and infamy. The history of religions justifies the psychogenetic generalization of Auguste Compte, whatever error may attach to his system of philosophy. "The race like the individual passes through three intellectual stages—the theological, in which a supernatural origin is sought for all phenomena. *Deus ex machina* is the only explanation of all events. The Metaphysical in which the consciously supernatural is set aside as incredible. The Positive, in which the mind affirms the futility both of the theological and the metaphysical." The hysterical poet was the hypostasis of the Hebrew-Christian religion. They sang and still sing alike under heavenly inspiration and guidance, and prayed and still pray for assisting impulse, and answers came and still come alike to both. And the reason is equal for the

acceptance of both or the rejection of both, and there is no scientific or philosophic reason to accept either for what it claims for itself, and revelation equally for both or rejection of both. The dawn of questioning thought of the race and of the individual, left to itself without instruction is, that matter so far as it is observed to move or change, is everywhere animate, or that changes are carried on much as the child sees and feels them to be effected by others and himself. Not the Hylozoism that ascribes life to every atom of matter. Not Hylogenesis—the genesis, creation or origin of matter. Not Anima Mundi, immaterial, but inseparable from matter, and giving to matter its form and movements. Not the anima of Stahl, conceived as presiding in, but independent of, and superior to, which forms the body and directs and determines all its functions. For all these views are advanced thought. But the animism as set forth by E. B. Tyler in his Primitive Culture—the general doctrine of souls and other spiritual beings, as causes of all phenomena in nature, conceived of as done in a human-like way, hence an anthropomorphic God.

We have already laid great stress upon the universal tendency of men to seek a cause for all things and events coming within the capacity and opportunity of their senses. And as all minds are as essentially one as all matter is one, in the pursuit of cause all have passed along substantially the same paths of experience and reasoning. The savage and barbaric stages of human life have their philosophy of the world. And the first traceable attempt at philosophizing, or to account for phenomena, is the religious or spiritistic or humanistic, because man's way of doing things is the highest standard presented to early cognition.

Dreams and shadows and reflexion of his form and features in water, and echoes of his voice, find no other explanation than they are as real and distinct from himself as they appear to be. The savage also observes that

the new-born babe takes in or inhales breath or air, which to him is the beginning of life, and the last act of life is to exhale breath, or that which was first inhaled at birth. Life seems evidently to enter into the body at birth and depart as the last expiring breath. "The primitive and natural motion of life was that it consisted of the breath, and in most languages words signifying breath are used to mean the principle of life, and spirit is one of these."

The mistaken inferences of our early race-experience before the development of intelligence still clings to us, and is generally entertained in spite of correcting intelligence. We thus see our way clearly from barbaric experience to the beginnings of superstitious or religious notions, and their growth to the myths and dogmas, revelations and rituals of the most advanced religions of the present day, whose staying power is their ethics, which their advocates connect with their theism, but which belongs not properly and of natural growth to theism, and has been artificially and at a late day engrafted thereon, but belongs to, has its source and sanction in, and its beneficences are wholly humanistic, although people nowadays talk of working for God, and God wants you to do so and so. But moralities have sprung from human needs and are fostered by human satisfaction. That animals have spirits surviving their death as well as man is believed as evidenced by the usage of savage chiefs, whose wives and slaves and domestic animals are slaughtered at their death, whose spirits may serve them in the after life. His notion of an after life is derived, as is seen from his dreams of meeting the dead, his previous life-companions. We can trace the not long-ago obsolete practice in Europe of the sacrifice of the warrior's favorite horse at his grave that he may ride into the other world. The last act of this kind in Europe, says the Encyclopaedia Britannica, occurred at Treves in 1781. And its memento is still practiced by

leading the dead general's horse saddled and bridled and caparisoned in his funeral procession.

The juvenile thought of large portions of the race is that matter, so far as it is observed to move or change, is everywhere animate, and changes are carried on much as the child sees and feels them to be by others and himself. And this notion survives in some who are not children in intelligence. For there are Hylozoists whose philosophy of the ongoings of the universe appeals to them as best explained by supposing every particle of matter to be endowed with life and divinity. But a universe of an infinite number of personalities working individual changes without agreement among themselves, and the impossibility of agreement, was seen to be inconsistent with observed order, and the persuasion arose that there is one universal soul or spirit that stands in the same relation to the whole of nature as the human spirit stands to the human body. Then this notion became modified, and the great spirit is separated from matter, time and space, and is said to be both imminent in and transcendent of, nature, but directly or indirectly works all changes therein, so that God is all and in all. And perhaps this is the latest orthodox religious philosophy. But it is not the philosophy that rests upon intelligible scientific data. A philosophy that grounds on a statement that is not as self-evidently true, as the fact of existence, or must of necessity be postulated, as the non-beginning and the illimitation of space and time, and their universal and inevitable validities, cannot prove satisfactory. Hence, theism or religion that founds on, and everywhere in its course develops into, mysteries that find their exposition only by being merged in the one gratuitous and fundamental assumption of a creator, the abyss and climax of mystery, in which all others lose themselves but find no intelligible explanation for positive existence, change and stability. For neither creator nor creation is a thing of experience,

necessary affirmation or provable fact. Therefore theism can never become the philosophy of thinkers.

Discussion 40. As between theism and atheism, theism assumes the attitude of affirming and therefore of supporting by evidence, what is inconceivable, needless to affirm, is outside the field of experience, and impossible of proof. Atheism on the contrary is in the attitude of affirming what is self-evident. It has no thesis, at the start, to be maintained by positive proof. Or to put it differently, they both are at one in the necessity of postulating eternal uncreated existence, which in the last analysis must be causal of all that begins. And in this affirmation which is common to both, there is not implied creation nor creator . They each seem irrelevant after eternal existence is of necessity granted. (I should premise that by theism is here meant Judaistic and Christian theism.) It is likely that both theism and atheism would subscribe this statement as its primal postulate. There is and must be eternal, uncaused, self-existing and self-ongoing or active existence, with its necessary implications, space and time. The question may now be put to each of the thus far agreeing parties; What is, and what do you mean, and what do you identify as the eternal, uncreated and ongoing existence from which must proceed all that becomes? The atheist replies: Nature or the material space and time universe, and says the universe exists, is ongoing, and it gives no evidence that the matter and space and time of it, or its ongoing changes, ever began, or will or can cease to be. And there is nothing else that can realize the fact of the primal postulate which must be of universal cognition without extrinsic proof, or it could not be the primal necessary postulate of eternal existence. And here atheism, which means denial of theism, that is, denial of the creation of the universe, and therefore of its creator; on the affirmation of which atheism reposes as foundation. Eternal existence is a necessary affirmation,

therefore denies creation. It must of necessity be granted from the self-evidencing validity of the proposition. But the theist must prove two propositions by extrinsic evidence, because neither is self-evident, or of necessity postulated, or comes within the range of sense, or of any experience. First, the creation of the material universe. And since this is neither self-evidently true, nor can be intrinsically or extrinsically proven, and therefore its creator cannot be implied, he and it must be proven. The theist's primal postulate is what the atheist denies, *viz*: Nature or the universe of matter, space and time was created from non-existence. Then its creator and its beginning are necessary logical inferences from this premise. Then the creator and not his created product, the universe, is the primal postulate, and he is the eternal and uncaused existence from which proceeds all that becomes. It is seen that this postulate divides into two parts, the first which is the formal primal, is an historical fact to be proven. And a fact to be proven can never take the place of the primal postulate. And the intended theistic postulate is an inferential sequence. But it does not logically and really follow the proof of the proposition laid down. But any failure of demonstration of creation leaves its full measure of inconsequence of the creator.

The atheist's primal postulate is: There is eternal uncaused existence. And as a logical demonstration to any who from lack of thought upon the subject, should fail to see this proposition to be self-evident, he says: Nothing can begin to exist without cause for beginning to exist. Nothing can be its own cause for beginning to exist. There is existence, therefore there is eternal uncaused existence; he does not have to prove creation from non-existence. Being obliged to grant existence as eternal and uncreated, creation is not necessitated as an averment or as a belief and if averred must be proved. The atheist calls up the universe in its totality, and

every individuality and personality of it, including the theist, to witness to its existence; and asks, do you as the universe, and every particular part thereof, know yourself to be created from non-existence? The universal response is, no. The theist then steps forth, and asks: Do you know yourself to be eternal and uncaused existence? And the response is as universal, no. The atheist rejoins: My primal proposition which is incompatible with creation and creator, is not to be proven *ab extra* or by self-confession, but is self-evident from its necessity of being, and of itself containing causally and conditionally, all that becomes. The universe exists, and theism does not deny it. Atheism says, inasmuch as there must be eternal and uncaused existence (and theism says so too) the universe than which there is no known existence known to be not therein included, must be the eternal uncaused existence, unless the contrary can be shown, and the burden of showing it is upon the theist. He affirms it. The theist will probably say: The creator has himself confessed to the creation of the universe, than which there can be no stronger proof of it. The atheist asks: Is the creator before the court in person? The theist answers no, but he has inspired holy men of old to make the announcement for him, and in his name. Then the demonstration of the creation of the universe on which the inference of a creator depends, drops from a necessary affirmation or a demonstrated fact, to a question of the competency and veracity of hearsay testimony, and the question of whether there be such a being, and if there is, whether he ever made such a declaration to men eons of ages this side of the event. The burden of proof is upon the theist. Atheism shows its position to be that of a possessor of as against an adverse claimant. It has not in the first place to show its right of possession, for possession implies the right. But the claimant must defeat the right of the possessor by showing his paramount right of possession. The athe-

ist or non-creationist says, the universe of matter and energy, space and time, is, exists and is ongoing, and the quantity thereof is fixed and persistent, and gives no evidence of having ever begun or ever been created from nothing. It is the sum and every particular of all that is, ever was, or can be. It affords the needed grounds of all we are or know and of our knowing. It is the whole of all that is known and all knowers. And the totality is knowable. All things and all thinking are in, and of, and cannot be out of, or beyond, the infinite quantity of the substantive universe and its changing becomings. Theism itself and atheism and religions are phenomena of the human part of nature or the universe. They are simply affirmation and denial of certain propositional ideas, fundamental in philosophy and religion, far reaching and influential, to be sure, and now put over moral character. For moral character is humanistic, as distinguished from religiosity which is theistic. And giving to theism the fulness of its etymological meaning, in fetichistic savage and barbaric ages, or strata of a development, it covers the whole ground. Atheism is the after thought of larger intelligence and a more moral life. And theism, today and in Christendom, is disposed like the suddenly grown rich and occupying first place in society, to deny its birth, the foolishness of its grounding in fetichism, and the criminality of the teaching and doing of its not very remote ancestors, and all because of their theism. And I do not remember ever to have read of a crime committed simply on the ground that the committer of the crime was an atheist. For no intelligently persuaded atheist ever claimed it to be his duty, or he might, if he thought there was no after life in which to be punished, kill, steal and lie; or ever believed that atheism permitted or authorized him to make war upon and exterminate the people of a nation or a province and enrich himself with the spoils, and occupy their lands and homes. These crim-

inalities of war are of record against theism as theism; against Hebraistic monotheism by direct command. See Deuteronomy XX, 16, 17. Against Christian theism, the offspring of Hebraism; Hellenism and Modernism, by implication, manifested by thanksgiving services to the Hebrew's God, as an acknowledgment of his approbation and deed, in killing, wounding and destroying, on the winning of a battle. And against Mohammedanism by command of Allah's prophet. See Sale's Koran, page 375. And it is said that Buddhism, which is atheistic and was formally intensely missionary, never propagated itself by wars or other criminal acts. Theism denies all that is known as substantive and persistent existence to be that which must be postulated as the eternal and uncreated, and substitutes a myth, a legend, a mere empty assertion. But it is evident that such cannot be the necessary postulate on which rest all changing phenomena. We must of necessity grant that there is eternal quantitative existence, within whose intrinsic nature resides the full reason of all that becomes and ceases to be. And this is the first and inevitable postulate of theist and atheist. Neither creation nor creator can be this postulate. And having of necessity granted eternal uncreated existence, there can arise no ground for the after allegation of creator or creation.

Discussion 41. Why cannot the universe of matter, space and time be, and why is it not, the eternal uncreated existence and being within which potentially, there is the sum and difference of all that becomes, the primary postulate of a universal, scientific, philosophy? The subject matter of such philosophy must include the principles of philosophizing, the philosopher and his methods, and it must ground on neither creation nor creator, nor on what needs proof, or proof can be demanded, but on the necessary primal postulate. Eternal quantitative substantive existence must have a mode of existing eternal and quantitative; which can found and express all

force or energy, and all changing phenomena. This is realized in motion, which appertains to every particle and every mass of matter. This simply declares that universal and ever persistent motion and not absolute rest is the mode of existing of eternal matter. "All depends on matter and motion," says Secchi, the astronomer and Jesuit. "Matter possesses one inherent quality: it is constantly active," says Gerherdt, the French chemist. That matter is everywhere and always in motion, is a common-place in scientific observation and demonstration, so far as knowledge of the universe extends, and of legitimate inference beyond the domain of positive knowledge. The physics of to-day hold force or energy, which is motion of matter, to be as universal and unchangeable in quantity as matter. Matter no more exists without motion, than motion without matter. Science plainly indicates both by what it declares and what it logically implies, that motion is the mode of existing of matter. Every change of temperature, every electrical or magnetic action, chemical combination or decomposition, light, life, thought, feeling, growth, decay; all evolution and involution, all coming and ceasing of property or quality, involve motions of matter.

The interpositional relations of matter together with its intrinsic nature or essential adaptedness to move rather than the inward essence of one everlasting positional rest, may be said, not indeed to initiate motion in the universe, in the sense of a beginning, for there can be no beginning in the mode of existing of matter which did not itself begin to exist, but the interpositional and motive relations of matter which being inevitable cannot have been imposed, and its essential nature contain all the cause and determine all results of its movements. The universal tendency of matter to approach a material center, is expressed by the law of gravitation,—directly as the mass and inversely as the square of the distance. This shows that pure space distance and matter-masses are

universal and prime elements in determining velocity and direction of motion. The only known partial exceptions and indeed there are no exceptions, are the small and separated portions of matter that have become endowed with the properties of life. We know of nothing which changes space positions but matter and its belongings. All relations and actions are between one part of the matter of the universe and another, for there is nothing external thereto. Therefore all relations and actions, and all causes are internal to the universe. Consequently the universe is one eternal and ever-continuing system. But as the law of attractive motion is opposed by the law of reaction or repulsion, all matter cannot be massed into unity. And here is a prime reason for holding that it is the nature of matter to exist in distinct and separate quantities however small, as opposed to infinite divisibility. And to gather itself into atoms and molecules, and these into larger or smaller masses with separate spaces between them for motions of each particle of matter. And these unions and motions are the varied applications of the universal laws of gravitation and repulsion, and of motions as mode of existing of matter; and we have the full reason in general of all difference in phenomena. It is better to refer to unknown *how* and *why* of life and consciousness to the known rather than the absolutely unknown,—to matter in complex numerical arrangement, the complexity of the mechanics being greatly increased by distinct motion of every particles making up the atom; and it is said by the chemist that an atom of mercury is composed of 150,000 of such particles, and heavier atoms of still more. And every atom moves as a whole within the molecule which is composed of many thousands of atoms, and every molecule moves independently within the group of many thousand molecules composing a mass too small to be visible to the unaided eye. And all this machinery, not a confused, disorderly mass, but every particle, atom and molecule, and

its separate motions are adjusted into order not by a guiding and coercing intelligence, either imminent or transcendent, but by the eternal and inevitable nature of matter and laws or relations necessitated by space and time. The origination of life and consciousness and the highest grades of intelligence cannot be deemed improbable as functions of such mechanics. And the human brain and body are known to be such a mechanism. And such are known to belong wholly to the universe, which must contain all causes, processes and effects, all beings and all being. It is now held that the nature of all matter is essentially one and the same. And all differences in the universe are to be accounted for, not by fundamental differences of matter with mystical properties, manipulated by spirits everywhere bringing about all changes; nor by one all encompassing and creative intelligence causative of matter and all phenomena. For nothing becomes explained by being referred to the absolutely unknown. But by the one eternal self-existing matter or substance, which is the necessary primal postulate, whose self-movements are determined in direction and velocity by the interelations of its positions. The problem of philosophy is to deduce from the primary postulate of matter and motion within the necessary conditions of space and time, all phenomena whatever. The universe in all its parts is intelligible, because it is one connected system of mechanics and their products. The utmost degree of intelligence is the self-evident. And action is necessarily involved in existing.

Discussion 42. Matter is, in its nature, forceful and needs no force foreign to its nature and suroundings to put and keep it in motions. And if it did, what could be the co-ercive cause outside, or within but not of the universe? Let an entity beyond and not of matter and not under the conditions of space and time relations, of adequate knowledge and power to adjust and put into motions every particle of matter and its star masses be

pointed out or shown to exist and operate the universe. A name, a word, will not longer suffice and satisfy to be built thereon a traditional empire of what was never grounded on better authority than the visions, auditions, dreams and unhistorical prodigies and thaumaturgies, of childish and barbaric minds, so far as proofs were demanded or given. And this empire of superstition of many forms perhaps was never stronger in defenders than to-day. But many of its defenders would resist its founding to-day should it be attempted by the same evidences that initiated it. And this empire of superstition commands the consciences and conduct of millions of human beings under the threatened pains and penalties of and after life. It has been well said that "Between the attitude of mind which accepts a proposition on the authority of ecclesiastical tradition and the attitude which demands scientific evidence of its historical truth, there is no compromise." And such is the difference between theology and its implications and science. It is not possible that any scientific verification can be given of theology. Which of the sciences may be called to prove the existence of a personality as creator of the material universe, the ordainer and manipulator of its mechanics, either directly and constantly and universally, or by imposing laws or relations upon matter by which the machinery shall work out the purposes of its designer and fabricator? Or a being exists transcendent to the universe, or that such a being has anything to do with man as to his origin or destiny? Such affirmations belong to theology and religion. How are they to be evidenced to the attitude of mind that demands scientific guaranty for what it holds to be true? Is the existence of such a being historical, or to be proven by historical evidence, or such a being implied from the existence of the universe? Absolute creation or creator is not implied in positive existence. For the primary and necessary postulate grants eternal and uncreated existence. Or is

such a being to be discovered by the processes of thought? Can any proposition be more fanatical than that matter and all that is objective is brought into existence as product of thought? If an objective existence, must it not be material and acting under material relations and restrictions? Then anthropomorphic or otherwise, and an impossible creator of the universe? Discovered in thought and by thought and as thought? Then objectivity disappears, and the universe is but thought, and created by every man who thinks it and as he thinks it, and ceases to be when the thought of it ceases. What a monstrous, a ridiculous blunder; that the persistent, substantial world of which we are, our wives and our children, of which we eat and drink, and was the same to our ancestors near and remote, to whom the same vastness and substance, and concerning which the same problems presented themselves and at which they worked, as to us, and we are still engaged upon, should be submerged, engulfed, lost in and identified with pure subjectivism, the triviality, the nothingness, a waking, deliberate dream, a void filled with another void,—a feeling! And matter, materialism, the presistent substance in constant change of positional relation, form and function through its mode of existing in motions, the subject-matter of the sciences and philosophy, is ignored, denied a real existence independent of any knowledge of it. And a belated effect-consciousness, thought, the subjective state, the most helpless of all dependents, because the most refined, subtle, delicately poised, insinuating, secondary agency, the commanding, executive selfhood, the offspring of a most complex mechanic, but which exists no longer than the mechanics endure. This ephemeral product, property or quality, caused by, existing and acting in, its material mechanism, which it did not form, but which is functioned by it, and changes as the mechanism, changes, as does every non-living and non-conscious property or quality change through changes in its

producing mechanism,—has become the uncaused cause of itself, and of matter and materialism. "The thinking ego is the *source* of all knowledge." "Objects must conform to our mode of cognition." That is, objects are not in and of themselves, and in their own right of being, but only come into being when and as, and because we think them!

But all the ego can truthfully affirm itself to be, tracing its pedigree back to its primary ancestry; as the beautiful lily is traceable to the muck and slime of the pond; the temperature, that is, a certain degree of motion of the elementary particles of matter concerned in its becoming; and the brooding and nourishing atmosphere; and the light, a wonderful, perhaps a universal life-giving energy not supposed to be itself alive, a vibratory motion of the ether at terrific speed that envelopes every least physical and chemical particle of matter, the degree of speed within a local whole, determines the light as light, and its various colors, to an appreciative objective; how unlike the lily-making to the lily-made,—its form, parts, coloring, and emitted fragrance,—all its forming and endowing progenitors. And every property of a chemical compound, or a physical complex is traceable to constituents destitute of the property: so the ego is the simple, substantial, conscious intelligence, as function, or quality, or product, of its necessary and eternal intelligible (but not intelligent) objective, substantial, material, ancestry; that is, the objective takes on the consciousness of itself, and becomes,—generates, the subjective or self or ego, as a very specialized secondary and derived volitionally active agency, utterly dependent not only on their primary elements of matter, but on their continuance in the same physical arrangement of position and motion, through their continual elimination and replacement by others like them for being as it is; as the acidity of sulphuric acid is a secondary and derived non-volitional product and agency dependent on a cer-

tain chemical, that is, mechanical union, of non-acid sulphur and non-acid oxygen and non-acid hydrogen gases, a living capacity, faculty and receptivity, an effective putting forth of this unique and supreme character mark—*awareness* of positive existence and relations which have generated it,—the very self.

Discussion 43. Material existence and its positional and motive interrelations to itself through motions and affinities which are involved in its nature, have generated every property, quality and attribute of the phenomenal world, as summarized in physics, chemistry and other sciences including psychics. None of which properties bring into the organism any new matter, as an entity in which they inhere or whose essence they are, or remove any when they cease. Vitalization, thinking, feeling, add no matter or substance to the organism engaged in its activities. These material organisms are vitalized, think and feel, as the result of the moving mechanics of their matter. It is by the moving mechanics of the brain, nerves and muscles that we think, speak and act; or more corectly the I, self, ego, is not an entity separable from and independent of matter, but it is the function of the mechanics aforesaid. It is the mechanics of my watch that keeps time. It is the specific arrangement of the particles of matter among themselves through their natural self-affinities (no better word has yet been found to express their action) and the interrelated motions of the constituents of an acid which are not themselves acid, that as yet in some unintelligent way generate or function acidity. And so as to all chemical, physical and psychical properties. Vitalization implies some kind and degree of *awareness*. This property grows and develops into distinct and clear consciousness and thought, discriminating self from not self, with all the subtleties and potencies of intellectual greatness, beatific rapture and inconsolable despair, according to the internal state of the brain and the exter-

nal environment of the organism. All living and non-living things are composed of one and the same matter, now that the 70 or 80 atomic differences are resolvable in theory into one substance, no matter by what name called, whether electricity, matter or what not. All things and all differences come of this one substance, according to the present status of science. It has become living, aware, conscious, thinking, emotional, self-active, discriminating and choosing, through cosmic operations, and through cosmic operations will cease to be so. Dead matter is continually becoming alive, aware, conscious, as it is incorporated into the living body by ingestion, digestion and assimilation, and in all living bodies matter is dying and disintegrating and returning to the inorganic kingdom from which it has been raised to consciousness, but not by the agency of consciousness. Life is the function of the non-living Consciousness and all the word denotes and connotes, is a quality and whose value is dependent on its independent variables—the complexity and normal working of the interrelated material constituents of the organism. And its changes depend upon changes in these variables. It is a function of the variable mechanics of the organism, and the organism a product of cosmic forces and conditions. All life appears one in kind, and universally kindred. The properties of it are one increasing and differentiating quantity without losing its fundamental identity, from the simple *awareness* of the protista, to the verifications of the scientist and the concepts and demonstrations of the mathematician and philosopher, from the one celled organism to the organism of millions of cells, all working singly and variously to one confederated end of the individual, but not guided by conscious purpose beyond the individual. There is a state, a tendency, an inclination, a disposition towards a propensity, an aptness to become, a preparedness to act, to take position, all which may be regarded as potential

functions involved in the eternal nature of matter or substance, determined and actuated by local circumstances as special instance of the universal mode of substance existing in motion rather than in absolute quiescence, where would be fixed positional order but could be no kinetic energy, or changing form or event. Universal and eternal motion is the force of the universe. And from the necessary principles of positional and moving order involved in the validities of space and time, the kosmos is inevitable. Universe equals Kosmos. Universal order is eternal and necessary, not determined by intelligence nor predestined by divine decree before it was so. Intelligent purpose and volitional power, i. e., consciousness acting upon matter through the action of matter, is very limited in its range, is often without power to execute its purpose and is confined to an organism of living matter. And itself is the function of the highest specialized complex of positions and motions of matter known, organized by cosmic forces without intelligent purpose, i. e., without consciousness and final cause.

Discussion 44. That physical and chemical properties should be involved in and evolved from a material complex without involving intelligent purpose as a factor either in the make-up of the complex or in the evolution of properties, is not now called in question so far as I know, except on theological grounds, or by a few who hold contrary to any evidence, that matter itself is everywhere alive and conscious. But *how* or *why* properties of a complex arrangement of particles of matter among themselves should be so unlike those of their separate constituents, is as yet a profound mystery. And perhaps no scientific attempt at explanation has been seriously entered upon. The theological answer, "God so ordained things to be," still satisfies the great multitude, if the question ever occurs to them.

It is the unique distinction of the psychic from the

non-conscious function of material mechanics that is able to announce itself through an arbitrary metaphysic where nothing is discovered by a contemplated inward gaze, but an aristocratic sentiment, to be an immaterial entity, a spirit, ego, an order of being separate and apart from matter, its originator and master, and not its offspring and dependent. But consciousness that so announces itself is a material affair and comes forth from a physical and chemical organism and not otherwise, and cannot trace itself or any of its constituent elements outside the domain and working of matter. No immaterial entitative substance, i. e., persistent, identical quantitative existence is known. It is a needless assumption. Such conjectures are left to the faith and teaching of theologians and the uncultured intellect in the facts and doings of nature. Matter appears as surely to be the sole ground of psychic as of non-psychic phenomena. When the thinking self can show step by step, as in the solution of a mathematical problem, *how* and *why* physical and chemical properties emerge from combinations of constituent elements utterly void of these properties, the thinking self will probably be able to show *how* the self emerges from constituents utterly void of the self. Should one say, consciousness is a functional product of a different order of being from physical and chemical functions and cannot be deduced from physics and chemistry, and for its ground of becoming must have something essentially different from and other than matter and complex interrelations with itself in positions and motions. For its being it must have a substance not material. If this pure hypothesis can be sustained by such evidence as grounds all difference and all phenomena in one material substance, the evidence of sense, experimentation and all that mechanics and mathematical evidence makes for the material view, such evidence of an immaterial substance, called soul or spirit, deserves attentive consideration. But no

such evidence can be adduced. The objection to a material and Kosmic basis for consciousness amounts to this and nothing more. "Matter *cannot* become living and conscious of itself; its interrelations, properties, and functions alone through its own nature and all that is connected by Kosmic forces besides, whatever these may be." It is simply a verbal negation upon the powers of matter and nature, and not a showing through the proofs of sense or otherwise of the existence of an immaterial substance, an abiding entity, called soul, spirit or what not, but not material. What is the evidence that immaterial spirit, if there be such, can think, feel and especially could have created matter, arranged it and put it all in motions as a kosmos? But this assumed entity is never presented to sense or consciousness. The self never witnesses to such causation of itself. It never discovers its parentage in an immaterial entity. It is a pure fiction. The properties or functions of this assumed entity are held to be consciousness and intuitive and discursive thinking. And the evidence sustaining the assumption of such entity and such functions should at least be as convincing to the adult unprejudiced science-cultured mind, as is the evidence that material substance exists. I say scientifically cultured, because in this state only is probative evidence properly appreciable, and can be so handled as to set forth and defend it in the most perspicacious manner. And what I mean by matter or material substance, as was early stated in this essay, is, eternal, uncaused and by consequence, everlasting quantitative existence. And the implication is that there is and can be but one such substance, and this is the only ground and seat of all properties, functions and changes, and forces, whatsoever, whether inanimate, animate, or psychic, that anyone has ever proposed and successfully defended. And these all are effected by evolution through the mechanics of the one substance in related positions and motions, and life and consciousness and

volitional acts are among these evolved products. Seventy or eighty eternal and uncreated kinds of self-existing substances might be so manipulated as to antagonize the reasonableness that so many fundamental kinds could be eternal and uncaused. But the latest scientific evidence is that these 70 or 80 kinds are made so by the transmuting effect of positions and motions of one identical substance, as expressed in chemical unions. And this has greatly strengthened the materialistic view of the universe and its becomings. Because it certifies to the amazing fact of radically differing results from the permutation of positions and motions of an infinite number of units of essentially the same form and nature.

Discussion 45. We have before remarked and it seems little if anything less than an axiomatic truth, that nature is everywhere intelligible; and intelligence is the necessary supplement to intelligibility in the completeness and whole of nature. And nature or the universe in its substance being eternal and uncaused, and motion involved as mode of existing of substance, and time and space orderly relating all motions and positions, intelligibility is inevitable, and has become conscious of itself. Or intelligible and intelligence are a dual fact, the relate and the correlate. The intelligible universe is everywhere open to intelligence through the function of the most complex of all complexes, the human material organism. And a legitimate inference from this view is that there is no such radical distinction as knowable phenomena and unknowable phenomena, or things in themselves, all is knowable. It should be remembered that theology and ecclesiasticism for centuries effectually blocked the attainment of the real knowledge of physical and psychic facts of nature, and only after the most severe struggle involving confiscation of property, imprisonment, torture and death, have uninterrupted inquiries into nature been permitted. As long as a created universe, a creating God after the teachings of Descartes, Leibnitz and others,

were the prime assumptions; and no conflicting thoughts, convictions or mental efforts, were allowed expression by the church, and deductions from these assumptions were the only methods of determining what nature is, and all difficulties were finally settled by declaring that such and such is the will and act of God, nothing decisive could be learned in science or philosophy. The word God as a finality stood behind and in the midst of every fact, truth and phenomenon, as direct and immediate, or indirect and remote cause, and the final answer of all questions was "God made it so." "God made it impossible that two straight lines should inclose a space, and two parallel lines should never converge or further diverge, though indefinitely prolonged." And it follows if so made or so ordained, they would not otherwise have been truths, and their converse might as well have been made or constituted truths, if God had so willed it. This arbitrarily assumed final answer to all questions, and unknown quantity and power, everywhere present and either directly or indirectly doing every thing, can never be resolved into known quantity or power, and there is no ultimate and fixed intelligibility of the universe, or science or philosophy, of the same. If the universe is a manufactured thing from nothing, or created from nonexistence, a greater impossibility, inconceivability, and absurdity cannot be expressed in words; then all axiomatic and mathematical and logical truths are manufactured articles, and they stand as truths no longer than the manufacturer choses to have them, and he has power to nullify as it must be granted he has, if he had power and authority to ordain them truths. Then all things rest on the caprice of their author. There is nothing ultimate but that caprice. But let us change the view somewhat and ask from whence in human consciousness are the self-evident, universal, or first truths, concerning which there has been and continues to be much dispute. Are they original elements in part constitutive of mind,

as angle is in part constitutive of triangle, or center is in part constitutive of circle, or are they merely and perhaps unconsciously generalized human experiences and we can go no further, fixed in brain organization by their constant and invariable realization in experience, and passed on to posterity by inheritance, so that they can now be neither denied nor doubted, nor their contraries conceived? Whence could arise their constant and universal occurrence in human experience, unless they are involved in the very being of nature and in part constitutive of her intelligibility? But intelligence the correlate of intelligibility, implies and grounds in mathematical, i. e., mechanical and logical order, therefore they are and must be in part constitutive of intelligence. These truths being presupposed in all existence and action inanimate and animate, it is not necessary that they should always rise above the threshold of consciousness in all the activities of intelligence. Human reason and reasoning are the correlate of nature's processes. The mathematics, logical induction and deduction, analysis and synthesis and all verifiable knowledge (and there is no science that is not verifiable) prove the harmony between being and knowing. Being is primary, knowing is secondary and derived. This is evident since being must be presupposed in order that there can be knowing. Being has discovered itself to itself by becoming consciously individualized. This specific, organic, determinant, individuant, biological intelligence, is the conscious realization of existence, of its processes and its becomings. In much the language of Descartes, but with very different meaning, we think the being and proceedings of nature instead of thinking the thoughts of God, as he put it. Nature is envisaged in her own consciousness of herself. To make some inadequate comparisons but having some similitude of conception; nature superposes her intelligibility upon our organic receptivity which she has prepared to take the impression, and thus the antitype becomes the correlate, the

counterpart, or conscious intelligence of the type: or she impresses upon material organisms which she has vivified and made conscious of more or less and in a greater or less degree of certitude and vividness her infinite forms and functions and becomings. She generates the conviction in consciousness that all her processes and events are causal and consequential to the last degree. The abstract mathematical and logical processes of intelligence are nature's concrete proceedings and becomings. And this is proved by the superposing harmony between the within and the without, and sanctions the correctness of calculations.

The assumption that positive existence and its necessary pre-suppositions,—space and time, depend upon their absolute creation from non-being, rest upon nothing but the preposterous assertion of an existence capable of the impossible and self-contradictory task of creating something, that is, all there is,—the universe out of nothing. And is, as I have insisted, a human imbecile gratuity, and presents no explanation of what is, since creation of matter is inconceivable, is not a necessary affirmation and can not be proven; and then creator cannot be implied. And also, since the primary and necessary postulate is not creation nor creator, but eternal uncaused existence, created existence and creator are set aside by the necessary assumption of eternal existence. And what is, and did not begin to be cannot cease to be; we have a necessary ground of assurance of a permanent universe, ever changing in form and function. It would be surprising if it had not been so long continued and were not so common, and some men of strong and critical intellects in some directions were not very weak in others, and hold some false and absurd notions in the judgment of their peers, that intelligent men can be persuaded to believe that somebody's assertion that "God created the heavens and the earth," therefore the said creation is a fact and was a concrete production. "There are Gods

many,'' and any one of the many was just as competent to the bringing of something out of nothing as any other of the many, since all the evidence of it is the naked assertion uncorroborated by the illustration of the creation of a single atom of matter, or how it could be done, or any verifiable knowledge or possible conception of a being adequate to the task of creating concrete existence from non-existence. Creation is a mythical tradition of remote undeveloped man to satisfy the common human nature that demands a cause for all appearance; an invented story, purely fabulous and having no existence in fact. The Gods were mythical personages invented to account for things. How they did the marvels ascribed to them seems never to have been questions that rose above the threshold of conscious inquiry. And it is true, to-day, and separates the religious from the scientific spirit. The doings of Gods, the many or the one, do not enter into any science or scientific teaching to-day. I do not accord to theology scientific truth.

Creation of the material worlds is neither a sensible, an ideal, a historical, nor a necessary assumption. Nor can any theological or religious assertions prove it. It cannot be thought, nor do the laws of thought demand its averment; nor does its denial involve an absurdity; as the illimitation of space cannot be thought, but its denial involves an absurdity. Creation has left no marks upon the universe from which it can be inferred. Geology furnishes evidences, for inference, of mutations and their proximate causes which have taken place in the earth's crust in remote ages and are still in operation, and some evidence of the present internal state of the earth. Spectrum analysis gives evidence that some kinds of matter known on earth are in the sun, the planets, and fixed stars, which, with universal gravitation, affords some grounds for the implication that throughout the universe, matter is one in its nature. And Astronomy discovers to us the interrelations of the

bodies of matter in space. But the creation of matter has left no evidence upon itself from which its beginning to exist can be inferred, or of a time when it did not exist. The universe of matter is ever changing in its infinite self-functioning through its intrinsic forces, presenting different becomings and events, and of interrelations of positions by its motions, and consequently diversity of results, attributes, properties, etc., while its quantity of substance and energy and capability remain ever the same. But there is no evidence yet discovered that matter ever began to exist, or the objective validities of space and time ever began to be, or that matter in any respect has ever changed obediently to a supernatural cause, or that there is or can be a supernatural creative being, or a supernatural cause. Functions appertain to inanimate as well as animate nature. The physical, chemical and psychical, are functions of matter interrelated in positions and motions. Creation as a theory is impossible of development, and as an averment is impossible of proof. It is not included in the scientific consciousness. Therefore it may well be denied. It is evident that of the two magnitudes,—matter and force, if either increase or diminish in quantity, both must do so in the same ratio. And it seems reasonable to believe that if the quantity of normal physiological activity be increased or diminished, there will be a reciprocal ratio of change in life and intelligence or muscular action, as they are interrelated quantities. There are the theological, theoretical attempts to account for the human soul or spirit considered as a substantive entity. "Creationism is a term used to denote one view of the origin of the human soul, and stands in opposition to the two others designated as Traducianism and Pre-existence. The question is whether the soul of each man is immediately created by God and joins the embryo just after conception; or whether it is derived from the first man and is propagated along with the body by natural gen-

eration; or whether it has existed from the beginning, and when born into the world has simply a new manifestation. "The last mentioned is borrowed by Origin from Plato, held by John Scotus Erigena, and defended by some moderns, as Kant and Julius Muller. The second view was taught by Tertullian, and for some time prevailed in the Western Churches, and as it best explains the problem of hereditary sin, has been adopted by all the Lutheran divines. The first view, that of a divine concursus at the origin of each individual was adopted by Augustine and Leo the Great, and became a conspicuous feature of the whole system of Anselm and Thomas Aquinas. In modern times it has been advocated by most Roman Catholics and Reformed theologians, mainly because it agrees best with the prevailing representations of Scripture, is most consistent with the indivisible nature of the soul, and explains the freedom of Christ's soul from sin though he was born of a woman. There are a few who hesitate to decide with either, and say with Augustine: "When I wrote my former book I did not know how the soul derived its being, and I do not know now." *Concise Dictionary of Religious Knowledge.*

Discussion 46. "Among the ancient philosophers of every school it was universally accepted as an indubitable axiom, that the origination of any new existence out of nothing is impossible, that is, "*Ex nihilo nihil fit.*" Therefore all theists and atheists alike repudiated the idea of creation. Plato and Aristotle held that there are two self-existent principles,—God and matter. Since the Christian era all who acknowledge the Holy Scriptures to be the word of God agree in maintaining the doctrine of God's absolute creation of the universe, alike matter and form, out of nothing by his mere power." *Outlines of Theology by A. A. Hodge.* Here are two gratuitous assumptions from the scientific standpoint. First, that the universe is not the eternal and uncreated existence that of necessity must be postulated; for this postulate

of uncreated existence must of necessity be granted. And eternal and uncaused existence granted, there can be no necessity to aver creation of existence out of nothing, corroborated as the material universe is as being the existence that must be postulated by both the theoretical and practical proof of the quantitative conservation of matter and energy, and the impossibility of transcending the universe for existence not included in it, or in it and not of it. And second, that there is a being who could and did create the universe, matter and form out of nothing, simply and only on the authority of an ancient anonymous writing, much of which is obviously fabulous; and self-conflicting as it seems to the writer, is declared to be mythical and legendary by some professed Christian teachers. The first is without necessity of allegation as we have shown, and if alleged behooves to be proved. The second by no possibility can be established, and is so stupendous an achievement as to dwarf all other fabulous statements to commonplace acceptance. It is conceded by the Rev. Hodge that outside the influence of the Hebrew Scriptures, theists and atheists alike held it to be a physical axiom that there could be no origination of existence out of nothing. And viewing creation of the universe as an actual productive act, it could never be proven true to the normal intelligent and critical mind, or to the scientifically instructed intellect, were its only evidence its dogmatic assertion found in the Bible. The developed human mind could not be convinced of such impossible product by such inadequate evidence, had it not antecedently to its scientific development believed the said Scriptures from considerations quite different from the scientific consciousness. Scientific men, if there are such that accept the Jewish Scriptures as saying the truth whatever they say, have come to this conclusion on other grounds than scientific reasons and before they became well educated into the exact sciences.

It may be denied that the pursuit of an exact science, as physics, chemistry, astronomy, or mathematics, is adapted to initiate the conviction of the creation of the universe out of nothing; or rather it may be affirmed that these studies are adapted to dissuade from this conclusion should creation be suggested by anyone, since at every step in the pursuit of these sciences, go back so far as we may in time, there is implied a previous time. And this fact would not convince the reason that there is and must be a limit to the regression and a termination in non-existence; or reach an existence which in its nature, attributes and mode of being, has nothing in common with the material space and time-universe, because the existence reached is their absolute creator from non-being. But scientific knowledge can never legitimate the physical or logical inference of an absolute creation or a creator.

Religionists do not pretend to found their dogmas on scientific proofs, or on such criticised evidence as would sustain an averment in the alightened judgment of judge and jury of any court in Christendom. The Jewish and Christian religions found on a supposed verbal revelation with miraculous deeds, the latest being nearly 2,000 years ago. But there is no record of these extant and probably there never were any witnesses to them or record made of them, except by Jews who were antecedently disposed to believe not only, but to invent, for their tribal policy of government was a priestly craft of imposition, as was common throughout the world in those remote ages. Religionists override and set at naught in the sweep of their childish faith much that is the common-sense of enlightened men, and of themselves when directed towards any other subject, and accept as proofs of their religion the like of what they reject as evidence when alleged in proof of another religion. Men are not stronger antagonists to one another in anything than in their religions. Nothing is plainer than that all relig-

ions are matters of tuitional education resting on the universal conviction of the mystery of existence and of destiny. There are some self-evident primary truths which the educated creatonist seeks to avoid or ignore, because they cannot be disposed of in consistency with his notions of absolute creation, *viz*: the universal and unconditioned objective, and because objective therefore subjective, validities of space and time, the underlying and pervading principles of the certitude of the mathematics and of all calculation and observation of the material and psychic universe, and the impossibility that the developed intellect can accept their creation or beginning. For these truths are certain, *a priori,* or as first principles, and are absolutely necessary, the measure and pre-supposition of all apodictic certainty, the material and intelligible order of all things. These uncaused orders appertain to all existence and phenomena, and can not be imposed, or nullified, or modified, by any will, purpose or power. A distinguished author says: "It is impossible to imagine that there should be no space, though one might very well imagine that there should be space without objects filling it. Space is therefore regarded as a condition of the possibility of phenomena, not as a determination produced by them." "On the necessity of the *a priori* presentation of space rests the apodictic certainty of all geometrical principles, and the possibility of their construction *a priori.* For if the intuition of space were concept gained *a posteriori,* borrowed from general external experience, the first principles of mathematical definition would be nothing but perceptions." "Space is not a discussive or so-called general concept of the relations of things in general, but a pure intuition." "Time is a necessary representation on which all intuitions depend. We cannot take away time from phenomena, though we can well take away phenomena out of time. Time therefore is given *a priori.* In time alone is reality of phenomena possible. All

phenomena may vanish, but time itself cannot be done away with. On this *a priori* necessity depend also the possibility of apodictic principles of the relations of time, or of axioms of time in general. Different times are not simultaneous but successive, while different spaces are never successive, but simultaneous." The foregoing quotation is hardly harmonious with what the same author elsewhere in the same book, says upon the same subject of space and time. If it is impossible to imagine that there should be no space, as it certainly is, though one can imagine there should be no objects filling space; and if all phenomena may vanish, but time itself cannot be done away with, these expressions seem to necessitate the unconditioned, unoriginated and abiding being of space and time, independent of us, and of any consciousness of them, while we have the apodictic certainty of them in the mathematics. These truths our author maintains bear the character of inward necessity, and are independent of experience, clear and certain in themselves, and are therefore called knowledge *a priori.* But he afterwards seems to call the affirmations in question. "Time," he says, "is not something existing by itself, or inherent in things as an objective determination of them, something that might remain when abstraction is made of all subjective conditions of intuitions. If we drop the subjective forms of our senses, all qualities, all relations of objects in space and time, nay space and time themselves would vanish. They cannot exist by themselves, but in us only. Space and time are pure forms of our intuitions." *Us,* presumably means human beings, or at most sensuous beings. Then there was neither *where* nor *when* until there was sensibility that space and time might become forms of! We are persuaded that space and time are unconditioned conditions of all permanent existence and all becoming phenomena, and owe nothing to sensitivity. For all that exists, and all that becomes, and all that ceases, presuppose space and time, as where

and when; and of equal necessity are affirmed though we should affirm no existence and no becoming. And should we suppose our own non-existence and that of every sense perceiving and every other being, we could not reasonably affirm the non-being of space and time, but only their non-being to us, because of our own non-being. Space and time are the background or the fixed ultimates and abstract standards of all measurements, and the mathematics are the methods of their ascertainment and application, the science which treats of the relations of concrete existence and change to these standards. Space, Kant says, is not a concept of the relations of things in general, but a pure intuition. I see no ground to hold that if space is a pure intuition, it cannot for that reason be an intuitive concept of the relations of things in general. That space and time interrelate all existence and phenomena is self-evident. Geometrical magnitudes and forms are first thought of space, and concrete existence is wrought to these models in architecture and constructions, not only of human beings, but in all animate and inanimate nature. They not only cover intention, but spontaneity. Abstract mathematics are the standard of proof of the concrete, and treat of magnitudes and forms, and numbers discrete and growing by infinitesimal increments, and so commands motions of all degrees of velocity; whose deepest underlying, necessary, universal, *a priori,* all embracing and eternal facts and truths, unimpeachable and unmodifiable, are space and time. These verities of primal being are not dependent on any supposable conditions. "But the basis of all scientific explanation consists in assimilating all concrete facts to these standard facts and verities." The Infinitestimal Calculus, called also Transcendental Analysis, a branch of mathematical science, commands by one general method, the most difficult problems of geometry and physics. The Infinitesimal Calculus, both in its pure and applied forms, whether of geometry or mechanics, is a branch of

the science of number. It regards number as continuous, i. e., as being capable of gradual growth. The simplest idea of a differential is got by considering number as made up of infinitesimal elements, and a differential or infinitesimal as being the value of the difference between a number at one stage of its growth and at another very near it. The Integral Calculus deals with the universe of the Infinitesimal. The whole of the lunar and planetary theories may be described as an application of the Integral Calculus. It is applied in the investigations of hydrostatics and hydro-dynamics. It is the instrument without which most of the leading triumphs in physical science could never have been achieved." There are various methods of mathematical science, all treating of common and special relations of things in general, and all based on the intuitive, universal and necessary truths of space and time. These abstract magnitudes and forms and numbers and relations of space and time inevitably carry with them exact correlates of positive existence and motions, i. e., all changes, if such there be. They are, and owe no dependence of being upon material or psychic existence, or any other. Their being cannot be affected by material or psychic existence or non-existence. They are neither the one nor the other. They do not necessarily imply any existence whatever, but are the *where* and *when* of all existence whatever.

We may well say they are *a priori* in the most positive and universal import. They are the subjective forms of our sense intuitions, our sense appreciations, because they are the forms of all external and internal things and events. The internal implies the external and could not be without it, for if it is, it must be somewhere and space is everywhere. Space cannot be affected by what is in it, or by its state or conditions; nor time by what is in it, or transpires or endures in it. Space and time are where matter and motion, and thought and feeling are, and where they are not. Space and time are in

matter, and motion, and thought and feeling; and matter, and motion and thought and feeling, are in space and time. These validities are universal and omnipresent being, and determine all existence and change. They can by no possibility be affected. Time is not a flowing stream, a flux; is not separable into past, present and future, except as a convenient fiction for the advantage of speech and thought. Time is one and not many; is not differentiated by character-marks, neither is space. Positive existence, and its changes are separable by many differences laid in an inseparable dual unity; infinite dissimilarity in the embrace of one eternal, universal, uncaused, unbroken, unmodifiable, unimpeachable and all commanding, unity of veracity. Space is pure infinite extension, time, pure infinite duration. They cannot be defined through genus and species, but only in equations of their own terms. Matter is extended and measured against the background of space. We cannot know that space is a plenum. Time and space are necessarily presupposed conditions, the laws and relations of quantitative, physical existence; of its changes, its becomings, functions and properties, but not caused by them. And they are not existence in any physical sense. There are no presuppositions underlying these validities before the assent of their being can be granted. They do not admit of supposed creation, decree or ordination, or as product of thought, will or power, for they are antecedently implied in these processes. They are primary facts discovered by nature's function of self-intelligence. They back and bank all other certitudes. Space is an infinite triply-extension, co-ordinate, homogeneous *continuum* abstract, and determining the laws of position, direction, distance and the place element of motion, of all positive physical existence. And time is an infinite, homogeneous *continuum* of duration, giving the time-order of changes in real or ideal existence. All existential difference is of positive existence, and not of space or time *per se*. The

laws of order are in these validities,—are these validities and command all existence and change. Philosophy as well as science and practical life found on these primary inevitable assumptions. Time and eternity are one and indistinguishable. Spaces are one and inseparable space. Time and space are nature's difference of measurement, her contrasted but agreeing verities, to which are adjusted the indefinitely small and the infinitely large. These patterns and forms of things and events, are always and everywhere set up for use, are never out of order, but their accurate use requires skill. Object and Subject, substance, motion, property and quality, thought and feeling, must have its where and when, form, how much, at what speed.

Discussion 47. Aristotle declares that to know the physical cause is to know the efficient cause. And Francis Bacon said that physics is the ground and source of all science. No objective truth seems more evident, but no truth is more fiercely assailed, and the contrary is more generally accepted in Christendom. The affirmation or denial of this doctrine, is fundamental in one or the other of the opposing philosophies, the material or spiritual. The theological philosophy of Christendom could not endorse the doctrine of Aristotle or Bacon; nor could it accept Spinoza's Sixth Proposition—"One substance cannot create another substance," nor the Corollary from that proposition. "Hence it follows that substance cannot be created by anything else, for there is nothing else existing except substance and its modes." But Spinoza begins his definition with this self-contradictory and absurd declaration: "By a thing which is its own cause, I understand a thing the essence of which involves existence; or the nature of which can only be considered as existent." That the absurd declaration of self-creation was not an inadvertence of speech, is shown by the ending of the Corollary in part quoted. "Now this substance, not being created by another, is self-caused."

Spinoza did not wholly break with the teaching of Morteira and other Jewish Rabbins, for he retained in a more absurd form the most distinguished characteristic of his Hebrew blood and cult,—the easy faith of creation, and affirmed it to be self-creation. No greater self-contradiction can be perpetrated with language. For before we can suppose a thing can create itself, we must suppose itself already existing. So ingrained in warp and woof of his mental being was creation, that he says: "There must necessarily be a distinct cause for the existence of every existing thing." Even God whose existence he declared, he avows to be self-caused. "By a thing which is its own cause, I understand a thing, the essence of which involves existence; or the nature of which can only be considered as existent." (*First Definition*) "By Substance, I understand that which exists in itself, and is conceived *per se;* in other words, the conception of anything antecedent to it." (*Third Definition*) "By God I understand the Being absolutely infinite, i. e., the substance consisting of infinite Attributes, each of which expresses an infinite and eternal essence. *Explanation*: "I say, absolutely infinite, but not infinite *suo genere;* for what is infinite only *suo* genere, we can deny infinite Attributes; but that which is absolutely infinite includes in its essence every thing which implies essence, and involves no negation." (*Sixth Definition*) "Two substances having different Attributes have nothing in common with each other." (*Proposition II.*) "It is impossible that there should be two or more substances of the same nature, or of the same Attributes." (*Prop. V.*) "One substance cannot be created by another substance." (*Prop. VI.*) "There cannot be two substances with the same Attributes having anything in common with each other; and therefore (per Prop. III.) one cannot be the cause of the other." *Demonst.* "Hence it follows that substance can not be created by anything else. For there is nothing in existence except substance, and

its Modes; now this Substance, not being created by another, is self-caused." *Corollary.* "It pertains to the nature of substance to exist." (*Prop. VII.*) Substance cannot be created by anything else, and is therefore the cause of itself." *Demonst.* "All substance is necessarily infinite." (*Prop. VIII.*) The Philosophy of Descartes and Spinoza, and also much of that today, was and is, deduced from an assumption which we are not necessitated to make, and of which we know and can know absolutely nothing whatever, not even its existence. Therefore the assumption is wholly gratuitous and needless. There is a necessary and inevitable primal assumption concerning which we have no knowledge, and which involves within it all actual and possible being and becomings. This necessary primal assumption as we have more than once insisted, is eternal, uncreated and uncaused being and substantive existence. This unavoidable primal postulate grounds and includes all actual and potential cause, power, change, material and psychic; all activities, passivities, issues, aspects, and forms of existing and being. It is intended to include in, and charge this primal postulate by necessary implication in its modes of existing, with all that is, ever has been, or ever can be, without the interference of any power without itself or within, but not of itself. For the reason that there is no without and no within other than itself. We do not recognize a supernatural and challenge its scientific proof. The Universe or Nature is the one-word expression of the all comprehensiveness of this inevitable assumption and its necessary belongings. And it renders impertinent and absurd to scientific data and logical reasoning the dogma of absolute creation of the universe, and consequently its creator. We cannot *think*, nor for the necessity of reason affirm a *before* substantive existence. By substantive existence I mean existence which in quantity can never be, and never has been either more or less than it is. The primal

assumption in existence is already given of necessity. And its qualifiers must be eternal, uncreated and uncaused. And its implied necessary conditions are space and time, and modes. For to exist implies *where, time* and *way* of existing. as says a learned author: "The starting point for reflective thought must be a proposition which includes all that is to be deduced." All becomings and changes are evolved from, because involved in, what has eternally been and been ongoing, i. e., the universe, from causes within and of itself. All contingencies and allegations of the miraculous arise in thought from ignorance of natural causation. There is involved in, and compatible with, the certainties of nature, all that is free in will and voluntary in action. Capacity to learn and limited knowledge, are increased by inductive experience. But infinite knowledge would deduce all events and changes in the universe.

"Theologico-metaphysical speculation, pursuing its untrammeled course from generalization, to generalization, always reaches Pantheism. It sees God everywhere and in all things, because it is coerced by the logical impossibility of separating God from existence or existence from God. This resolution of all things into one, of Nature into God, is a contradiction of all our experiences of a manifold."

What is everywhere and in all things is indistinguishable from all things, but distinguishable from "everywhere," for there is no greater contrast than between thing and place for thing. And will any one deny that all we know and all we are, is of the universal all? We must start in our reasoning from what we *know,* and we know neither the creation nor the creator of something from nothing, or existence from non-existence. Nor is creation or creator a self-evident first truth, nor a necessary implication from anything or from all we know. Nor is either a possible conception. No observational, experimental, necessary inferential, or apodictic-

proof, or analogical reasoning, can be given of the creation or of the creator of an atom of matter; nor can there be formed an adequate thought conception, or mental picture, of *how* or by *whom,* or of *what,* it could be done, much less the material universe.

It is easy to say Almighty power and infinite wisdom could have done it. But it is equally easy to say, and with quite as much reason, that there is an infinite impossibility against such a feat being done, and of there existing such power and wisdom, there is no proof. Of such existence I can form no adequate conception, neither is it an intuitive or necessary affirmation of the reason, or an historical fact. Neither does the assumed theory of creation or creator render us any help in our scientific investigation of nature. Nor is either postulated as, or the resultant conclusion of, any scientific, logical, mathematical or sensational premises. Science knows no creation out of nothing or creator. Nor is either an object of the imagination, but simply a gratuitous assertion.

That there is existence existing eternally, uncreated and uncaused is a proposition not reached in the childhood of the race, or of the individual, or in puerile manhood, but is inevitably reached in the process of philosophic reasoning, and is immediately seen to be a necessary, self-evident, and most fundamental and all-embracing truth, in what it asserts and in its implications. But no more to be conceived or mentally pictured than is it to be conceived the infinite extension of space, but is as much a necessary affirmation. This necessary philosophic affirmation is incompatible with the crass theological dogma, which grounds in the faith of an historic creation and in the verbal allegation of a personal creator of the world of matter.

There is no beginning to exist of substantive existence, or of the being of its unavoidably presupposed conditions—space and time. And what exists without

beginning to exist must continue to exist without ceasing. And by inevitable implication it must be all that has perdured in one and the same quantity. And nothing that begins to exist can be its exact equal. And in the last analysis what begins must be the changes of that which is continually changing in place, form and function, and evolving attribute, property and quality and whatever else is, and then is not. Change implies motion. Then motion is an eternal and universal mode of existing of substance, and quantitatively fixed. Substance must exist in motion or not in motion. And so far as observation or inferential thought can do, it is everywhere in varied motions and nowhere at absolute rest. Movement of substance and not rest is essentially involved in its eternal and uncreated nature as mode of existing, and not enforced upon it from without, or by other than what is included in the expression—universe. For mode of existing and of being must be supposed self-included in what must be affirmed as existing and never beginning to exist, and of being and never beginning to be. The latter I mean of space and time, which must be distinguished from substantive existence and any of its phenomenal changes or emerging attributes.

Discussion 48. Motion appertains alike to its minutest parts and to these in their greatest aggregated masses. Nor are the smallest divisions of substance yet discovered, called corpuscles or electrons, and these constructed into atoms, and these into molecules, and these into masses, not one of them anywhere is without positional and motile interrelated order among themselves, and all by internal and external architectonic forces, ordered without design or designer or conscious purpose so far as can be shown and by sheer but necessary interrelations of number and volume, in definite directions and definite velocities of motion. In a word, from the mechanics of matter, affinities, and motions, all forms are built up, in which all properties inhere, and

from which all function are involved. "A soul is a history; and the history the product of the activities of a living human organism."

The different kinds of matter and consequently different attributes of each kind have, until quite recently been supposed upon their atomic difference, to be fixed and unchangeable, since their creation and original endowment. The discoveries of these fixed kinds of matter have reached 70 or 80, more or less. Their respective weights have been determined, and approximately, their volumes. All existence is intellectually seen to be undergoing change as mode of existing, not enforced upon it from without exclusively but involved also in its eternal nature.

I wish it to be very definitely understood what I mean by *Substance*, for it has a very large significance in this essay, and I have labored to define it more than once, perhaps in much the same terms, *viz*: that which exists in and of itself, without beginning to exist and without ceasing to exist. This of course, admits of no cause, and by implication denies a creator, because it does a creation. Whenever the term matter is used, the intention is substance, allowing of no increase or decrease of quantity. But matter is now the center of physical disquisition. But not the quantity of substance constituting the universe, except as to the question of its finitude or infinitude of extent. And the proposition of eternal, uncreated and uncaused existence in an infinite void as presupposed condition. I take it to be a self-evident and necessary affirmation. And I mean existence in contrast to space or place, as extension *per se*. While Descartes declares that "space or place, and corporal substance which is comprised in it are not different in reality." And Spinoza, teaching the principles of Descartes' philosophy, says: "Space and body are the same." "Body and extension are the same thing." "The nature of body or matter consists in extension

alone.'' This is matter and extension of which science, speculation and practical life, have, as yet taken no cognizance. In the allegation of substantive existence, I mean to deny that it and its conditions, space and time, which are objective as well as subjective verities, were ever created or caused to be, or could be caused to be. And the allegation of their creation by a personality is neither a mental necessity, a proven fact, a legitimate inference from all we know of the universe, or helps to make our investigations of nature intelligible. And I mean to affirm that eternal existence uncreated and uncaused is a mental, because it is a real necessity, and whatever becomes, whether called physical or psychic, objective or subjective, living or not living, organized or unorganized; whether at present, in the past, or to come, the mechanics and order of relative positions and changes, manifest in the heavens or the earth, and whatever is called property or attribute or quality, all that is investigated through all the sciences, the methods of investigating and the investigators, are involved in the nature of substance, its modes of existing and the verities of its conditions. And I do not mean to assert Pantheism. The universe is of necessity and not from the free choice of a personality: an ordered cosmos by its inevitable interrelations in the exactitudes of space order and its motions in space and time order, and its differences in numerical numbers. To find the ultimate causal explanation of all things in a conscious personality and a free will is a childish absurdity. Consciousness and free will, if there be free will, belong as mental qualities or attributes, to a living material organism, and not separate from it, to give any realizable meaning to these terms. To say a personality may be infinite in extent and content, without body or parts, omnipresent, omniscient and omnipotent, have no conceptive meaning, and these unlimited terms have no connection with the limitations of personality as we

know and feel it to be. It is mere empty declamation, not realizable in thought. By no possibility can the averments be felt to be necessary or self-evident or proven to be true or reasonable, or to follow as consequence from data that are necessary or can be proven to be true. "Consciousness itself, a personality, is essentially finite. The doctrine of a creation, requires that there should be a beginning." And affirming a beginning as a primary postulate, how is an eternal non-beginning to be reached? It can only be reached as a gratuitous assumption, like as a beginning was laid down. Then follows a gratuitous theology and philosophy. A beginning then a beginner, a creator, other than what is begun. For no existence can be self-begun. This false doctrine of a beginning originated in the infancy of the race and before the attempts to realize the meaning of an absolute beginning from nothing, a creation as distinguished from an evolution from something, and before the necessary and inevitable assumption of eternal uncreated existence had its birth in consciousness, which renders the gratuitous assumption of a beginning untenable and an absurd chimera. There is no consciousness without an organism—a material construction, that we can affirm. Consciousness seems a function of organism, and organism a product of chemistry and physics. But creator must needs be summoned forth. And there came forth a swarm of creators—Gods and Godesses that held the world in thrall for ages. But a time came when the assertion of many Gods was incompatible with more advanced intelligence. And now among those who call themselves the most enlightened, the number is reduced to one. Monotheism is asserted and Polytheism is denied. But if there is no beginning of existence as we must affirm, then there is no need to affirm a creation, and by consequence a creator. Those who affirm existence to be eternal and uncreated on the ground that it is a necessary and inevita-

ble affirmation, and by consequence deny a beginning, may be met with a denial that existence is a necessary affirmation. But cannot rightfully be asked *how* existence can be eternal and uncreated, for that would be an impertinence in the face of its necessary affirmation. But those who assert a creation of matter and by consequence a beginning, may be asked consistently with the assertion, *how* matter could have been created.

Bishop Foster in his book entitled "Creation," says: "The impossibility of conceiving *how* being can be originated must be admitted without hesitation and without reservation. The *how* of a properly creative act is an absolute mystery to human intelligence. But does it therefore follow that it is impossible?" To create a mental glamour upon the pure fiction of a creation and creator, identifying the latter with a personality, originated in remote ages of ignorance and never was and never can be to human intelligence raised above empty verbiage. Perverse learning not having laid off its swaddle but donned the toga, makes much of "imminent creation." "An imminent action is one whose effect remains within the subject, while a transitive action produces an effect different from the subject. An imminent creation is applied to the operations of a creator conceived as in organic connection with the creation, and to such a creator himself, as opposed to a transient or transcendent creating and creator, from whom the creation is conceived as separated. The doctrine of an imminent deity implies that either the world is God, or the world is in God." *Century Dictionary.* But to conceive, to apprehend, to form a distinct and correct notion of, in the mind, conception, as used in the dictionary quotation, is in my view, impossible. Therefore it can convey no meaning, is but empty words. Does the impossible conception of *how* creation takes place, render the act impossible? As long as the act cannot be proven, and is not a necessary affirmation, because eternal exist-

ence is a primary and necessary affirmation, the gratuitous assumption of the creation of the material, space and time universe, is both useless and absurd, and may be pronounced impossible. In religions, as nothing about Gods can be verified or disproven, beyond the willingness of the individual to accept, each person may and does set up such an object to fit the descriptive words as his learning and culture and disposition qualifies him to construct, since in the Christian scheme faith determines the fact of things, and with prayer, procures all things and all events desired by the believer, to the removal of mountains, the forgiveness of sins, and everlasting life. Every word in the Bible believed to have been written or spoken concerning the Hebrew or Christian Gods, by the persons orthodoxy supposes, is surely true of the Gods. And as faith is the test of all Christian doctrine, whether true or not is not fundamental, nor an individual question to be determined, the Christian doctrine never was proven to be true, and never could have been, nor was it ever set forth under that aspect of challenge. The test has been, what does the Book, what do the Manuscripts say? The theistic religions had their origin centuries before the scientific methods of inquiry into the truth of propositions and of pretended events had been invented, or the truth or falsity of religious story had become important.

Discussion 49. But the assertion of creation is a dogma inherited from the remote past and held by people who have given little or no thought to the question of absolute origins or to creation itself. Its sufficient answer is, the reminder that the truth that takes precedence of all other is neither creation nor creator, is not historical, but necessary and self-evident,—there is existence eternal and uncreated. The rejoinder would probably be, "yes, *that* is the creator." "The universe of matter and motion is so magnificent and wonderful, and their interrelated arrangements show so much design and

purpose, that it must have had a beginning and a designer." "Therefore a creator." But if the universe cannot be eternal and uncreated and self-ongoing and evolving all out of itself, changes, forms, functions, attributes and properties, the same mode of reasoning must apply to its creator. For how can its creator be eternal and uncreated who by inevitable presumption, must surpass the universe in all that makes it needful for the universe to have a beginning and a creator and designer by at least the necessary power and intelligence to have created the universe from non-existence and bestowed upon it all it manifests. But who can fail to see that the averment of a creation of the universe and the beginning of its creator, cannot bring into consciousness a pictured personality equal to the creative agency that did or could have done it, nor how it could have been done; or the feeling that the averment is necessary, in view of the necessary affirmation of existence eternal and uncreated, which makes creation untenable and needless. We cannot reason in favor of the creation of matter, "for what can we reason but from what we know?" The averment is without content of idea, and without necessity for itself. Its parentage is, "The universe cannot be eternal." But the chief if not the only ground for the averment of a creation of the universe in Christendom is, that the creator himself has made verbal declaration of it, or has inspired its announcement. But this averment is so puerile in point of view of its improbability as an historical fact, and the impossibility of its proof, and its unreasonableness from all we know, and the age in which, and the people by which, it was averred, and all the changes which that ancient writing is known to have undergone, as to render it impossible to know what its first draft was; and the improbability that, if God had inspired men to speak or record the truth about himself, or what he had done or what it was his purpose to do, he would not have suffered it to be lost, or do it so bungling-

ly, or suffer it to become entangled or incorporated with what he had not inspired them to say as with difficulty to be distinguished. So much of the initiative history of the Bible, is by confession of many who have thoroughly studied its authenticity and integrity, declared to be myth and legend and purposed fraud, that no reliance can be placed on its pretended divine revelation. There is no historical corroborative notice of miracles given by other peoples with whom the Hebrews had dealings, and who must have known of these events if they occurred as related. Not even Christ's miracles are noticed by the Romans, under whose government the Jews then were, and Roman officers and learned men, Gibbon says, were constantly traversing the land. This omission of all notice, even of resurrections of the dead, is a strong argument against their occurrence.

An argument is constructed by declaring that the 66 books of the Bible, written during the long period of 1600 years, by Hebrews and Jews, in which it is claimed there is perfect agreement, all expressing the same theistic doctrine and religious sentiment. And this can only be accounted for by supposing a divine revealment with the appointment of speakers, and a superintending providence running through the whole time. This is much too strongly stated. It is forgotten that there is such discrepancy between the Old Testament and the New, as to alienate the Jewish race from the New Testament; to change the weekly sacred day, and change strict monotheism to at least a quasi polytheism. Besides there are self-contradictions in the statements of the two Testaments; a searcher after such has found 144 which he has brought together and published in a little brochure. And what remains of the agreement is very naturally and satisfactorily accounted for in recital of the history of how the agreement of this sacred literature came about, found in the American Cyclopædia, first edition, article Bible, which I have already quoted for another purpose in my

argument for the Eternity of Matter, and of consequence the denial of creation and creator. And the discussion requires the direct handling of both points. A portion of the passages reads as follows: "For a period of not less than 1000 years, learned men have been engaged in selecting, authenticating and arranging in one volume the constituent portions of the Bible. And this labor is as nothing compared to that bestowed upon the correction and establishment of the Scripture text." "Selecting" means separation from others with a view to purposed and desired results. The selectors had determined beforehand what should be divinely inspired. Then the writings that should make up a sacred book that men should have faith in and obey on pain of everlasting punishment, although it had been divinely revealed, had become so indistinguishable, that learned men were 1000 years in discovering the true from the false. Then God was so negligent of results so important to mankind, and easily imitated, that, if learned men had not come to the human rescue the revelation would have been without effect. It is said that the ostrich drops her eggs on the ground, and gives no care to their protection. It was not the selection of book from books only, but we learn elsewhere that it was of expressions in the same connected writing, some were taken and some were left. How was it certainly known that what were chosen were divinely inspired? By a majority of voices, like a political question. For it had become a party issue. And no party issues in politics have been fought with more bitterness and perhaps more bloodshed than Bible and church questions. And the claimed author has remained as if incognizable of what was going on, or taking no decisive part in the matter as no concern of his.

"Correction and establishment of the Scripture text." These learned men selected and determined, corrected and put together the readings of the divine revelation and number of the sixty-six books of the Protes-

tant Bible. The Catholic Bible has more. Catholics accuse Protestants of excluding from their Bible a portion of divine revelation; and Protestants accuse Catholics of receiving into their Bible what is not the word of God. Besides there is a large literature called Apocrypha, meaning of hidden or unknown authorship. This might as well be said of most of the canonical books of both Testaments. There are fourteen of these books attached to some copies of the English Old Testament. These are said not to be in the present Hebrew Old Testament. But with other like writings they are part of the Septuagint, a Greek translation of the Hebrew Bible made at Alexandria about 275 B. C. Then they had been part of the Hebrew sacred writings. The Greek Church now accepts without distinction all the Books of the Septuagint. Nor has the need or practice of learned men to discriminate and establish what is divine revelation ceased. I read in the "History of the Revision of the New Testament," which appeared in 1881: "Concerning existing defects it may be said briefly, that the variations already detected and noted as existing in various manuscripts, versions and editions, amount to about 120,000. It is doubtful whether any two editions of the Bible, as now published are exactly alike. But of this large number of errors it is probable that at least 90,000 are of small importance." That leaves 30,000 important errors These must be chiefly as to meaning, but what and where is the standard by which to determine these to be errors of meaning? Certainties here should be of the most positive kind. And if intended for all mankind, as certain to the race as visible objects or self-evident propositions, this much would be reasonably expected if a divine revelation were really given with such awful sanctions as everlasting punishment for disobedience. But uncertainties become more and more apparent when criticism presses upon the early history of what is claimed to be a divine revelation of a theistic and religious scheme, a be-

lief in and obedience to which, is to save men to eternal blessedness.

The New Testament as we have it after being translated from a dead language, which is enough for abundant errors, and passing though several revisions, and being compared with most ancient copies known, which are not nearer to the time of Jesus than 350 years, the differences noted and counted up are not less than 120,000. The determinate reading of the New Testament was fixed by the victorious party as against a strong opposition as hostile to each other as were those for and against slavery, by the use of fraud and violence, even death. The Apocrypha of the New Testament, is as large as the New Testament consisting of writings most of which are claimed to have been written by the same authors as claimed to have written the canonical New Testament; or by Apostles and others more familiar with some parts of the Gospel history, than those who are believed to have written the accepted New Testament. The conquering party many years after the crucifixion, ruled these out. The orthodox doctrines of the Christian church were fought into general acceptance by help of the civil powers. From and after the conversion of Constantine, whose conversion the church historian says was thus effected—"As he was hesitating what divinity's aid he should invoke for the successful conduct of the war, a preternatural vision appeared to him as he was marching at the head of his troops; the form of a cross in the heavens appeared to him on which were inscribed these words: BY THIS CONQUER. On the following night Christ appeared to him and gave the pattern of a standard which he was to prepare for his soldiers to follow." Success of the battle of Milvian Bridge followed and Constantine was a Christian and head of the allied church and the world, falsifying the words of Jesus, "My kingdom is not of this world." Constantine presided at the Oecumenical council held at Nicaea 325 A.

D., which was chiefly to determine the relation between the Father and the Son raised by Arius. The doctrine that had come into vogue without exciting much discussion was that the Son was con-substantial and co-eternal with the Father. Arius was a presbyter in the church at Alexandria in Egypt. If the Son was begotten by the Father, Arius argued that the Father was older than the Son, and there must have been a time when the Son was not. The council decided against Arius, and against the logic of common sense upon the premise given, *viz*: the Father begot the Son. The doctrine of the Trinity has not ceased to divide Christian consciousness from the day that Arius raised the question to this. All the essential theistic and religious doctrines of the Christian Church have been opposed to the extent of disfellowship and discommunion. There never has been and never can be universal agreement in one and the same theistic and religious conviction. Because mankind can never be subjected to one and the same kind and measure of sense experience and intellectual culture. Circumstances, inclination and capacity forbid it. Hence the folly of preaching the universal acceptance of the Christian religion. The universal church is now so far separated into hostile sections that intermarriages seldom occur between their members; nor do they often meet in social intercourse, and never in Christian fellowship. And missionaries are employed to convert the members of one party to the views of another party, although all profess to ground on the theism presented in the Bible. Christianity has been propagated by violence and bloodshed. Nevertheless it has done an incalculable amount of good. So has Mohammedanism, Polytheism and Fetichism. Not because the theistic doctrine of any one of the four *isms* is objectively true, but because the devotees of each believe they are true. It may be well to call to mind a deed of death that Cyril, archbishop of Alexandria, Egypt, A. D. 415, is charged with. Hypatia, a Neoplatonic phil-

osopher of Alexandria, was famed for her beauty and her learning, professor of mathematics in the renowned scientific and philosophic school at the Museum. She was not a Christian. But so far as I have read, taking no active part against Christianity further than her intelligence, philosophy and general moral character were against it. Cyril, it is said, instigated a mob of his fanatical monks to attack her as she was riding in her chariot, dragged her into a church, stripped her naked, drove her into the street, tore her flesh from her body and threw her mangled remains into the flames. It is but justice to say that the church historian says that the Christians of the city condemned the deed. But at that time and in view of other deeds committed by the church against opposers, it is perhaps as likely to be on the common ground of humanity as a felt wrong against Christianity. For that must be propagated to save men's souls from hell, and to destroy influential opposers may be painful but justifiable. So thought Calvin in burning Servetus, and all who killed those accused of witchcraft, under the direct command—"Thou shalt not suffer a witch to live."

Christianity is Judaistic—Hellenistic. But its tritheism is an inheritance from Polytheism; and its worship of the "Mother of God," and adoration of the pictures of saints drawn from sentimental imagination, and its miracles, the achievements of osseous relicts of saints, or a bit of the cross on which Jesus was crucified, or a nail by which he was suspended on the cross, are inheritances from Fetichism. The origins of Christianity are set forth by Loisy, the recusant Catholic priest, and of consequence the ex-communicant from the Catholic church, now professor of the history of religions in the College de France. In his opening lecture on the first Monday of May last, he says: "The analysis and synthesis of all the religious factors, which in the Roman Empire led up to the forming of the religious mentality

and body of doctrine and institutions whence our Western world drew its nourishment up to the dawn of science in modern times, primitive Semitic religions, Egyptian, Assyro-Chaldaic, Israel's religion, Judaism, Mazdeism, Greek, Greek religions, philosophy, Syrian and Phrygian, Gnosticism, evolutionary and dual—all helped to religious synoretism in the Roman Empire and in rebounding to the formation of the Christian religion in the Roman Empire." Loisy also made his own a declaration of Jean Reville's, that it is in the human soul that we must seek the ultimate and sound explanation of religious phenomena; in the imagination; in the heart; in reason; in conscience; in instinct; in the passions.

No one but a fanatic, no one who has studied the negative as well as the affirmative of the proposition, "The Bible is the Word of God," will seriously attempt to prove the affirmation. Religions that found on the claim of a divine revelation, and antagonize one another, mutually defeat the claim of each other. Nor will he point to the agreement between the 66 books of the Protestant Bible as proof of a divine thread running through and connecting them all upon one subject-matter, unless ignorantly or purposely missing the thread as a human device realized after centuries of labor to produce this result.

Try to conceive a creation. Now there is no universe of worlds or change, or truths of space or time, no axiomatic truths; the whole of a quantity is greater than a part; the straight line is the shortest between two points, are not truths. *Presto.* Now the universe of worlds and atoms come into existence from nothing and from nowhere. Space and time come into being and the mathematical axioms involved in them. And all this by the fiat of a personality, manlike, with pre-purpose and devised plan to have all things as they are and ever shall be, and not otherwise, although they might have been quite otherwise. Not every wide-spread multitudinous

and age-long embraced errors have been formally and really refuted. But independent thinkers who dare to call in question the dogmas of a remote past and demand proofs for their creeds and philosophies, outgrow what they have before accepted and perhaps advocated on popular grounds. What has become of the world of fairies, and the Gods and religions of ancient Egypt, Assyria and Babylonia, Greece and Rome, and their sacred literatures? They have been simply left in the progress of intelligence. It is likely that the theology of three thousand years hence, if there should be any, will be as remote in its fundamentals and features from what it is to-day, as that of to-day is from that of three thousand years ago. The advocacy of the creation of matter is rarely attempted directly, for it is a dogma that admits of no direct or analogical reasoning. It is simply a part of a theological creed. But its acceptance or denial changes the consequential view of all else. The only reasons for averring a creation of the universe worthy of consideration in this advanced age, having outgrown all *ipse dixit* authority respecting it, is verification, or scientific analogies, or critical historical evidence that is demanded and is convincing. And not the story of a voice from a mountain top putting under moral and formal obligation a world of intelligences; or fire from heaven that consumes a sacrifice and the water with which it is drenched, and the stones that composed the alter; a rod turned to a serpent that eats up other rods turned to serpents; the water of a great river instantly turned to blood; a whole country now filled with frogs, now with lice, now with swarms of flies; all the domestic animals of a whole people killed at once with murrain; the whole land of a country covered so thick with locusts that the land could not be seen; darkness enveloping a country, but not the darkness of night, but produced in daytime; the first born of a nation of people killed in one and the same night. All these calamities overtake a

nation of people except a group of foreigners that occupy a small portion of the country who were immune from these disasters by the cause of them. But not a word of historical record has this smitten people or neighboring peoples preserved of this national calamity for the instruction of their posterity and the wonder of all coming ages, although they did record abundantly their domestic usages and foreign relations. The record issues only from the group of foreigners who make themselves the amazing beneficiaries of the people previous to these stupendous calamities; who alone have made record that they were in Egypt, how they got there , and how they got away. The Egyptians themselves apparently were oblivious of the Hebrew people ever occupying Egypt either as its rulers or its slaves. Of the many dynasties they have recorded, they say nothing of a Hebrew dynasty. And in as much as the whole tale is miraculous and out of the order of historical events, we may without violence to historical credibility declare the whole narrative to be unworthy of credence. The only reasons for declaring the creation of matter worthy of consideration are, that creation is the primal and necessary postulate; or that matter itself bears unmistakable and universal marks of having begun to exist. Neither of these reasons could be maintained if alleged, and no one would make the allegation who had not already committed himself to the Bible allegation of it, and resting on that allegation, notwithstanding the impossibility of there ever being any historical evidence of it, although an historical event; neither any necessary or ontological or scientific data from which logical reasoning would issue in the conclusion of creation; and notwithstanding the necessary primal postulate of eternal and uncreated existence which by implication is a denial of creation. And in consideration that the universe constitutes all existence of which we know anything, or can conceive, or need to affirm, and the impossibility of intelligently affirming

the absolute creation of the universe, or even a particle of matter. To say the creator could create matter and the worlds, and he is the author of the declaration of creation in the Bible, is only human *ipse dixit*, and has no scientific or verifiable validity, and is unworthy of serious consideration for one who is seeking truth for truth's sake. That the universe could not exist without having been created is often asserted. But this is to be noted, that creation is here first gratuitously assumed and then given as the reason for its assertion. The same reasoning is applicable to the creator of the universe, and would require the creation of the creator, and so on creation of creators regressively *ad infinitum*. It may be assumed without a possible demonstration to the contrary or even a reasonable showing, that any statement coming through human testimony or coming to human consciousness, has not a supernatural source. We ask why the universe (we do not say in its present forms and functioning or any that can be definitely imagined) cannot be the eternal and uncreated existence that is the primal and necessary assumption? Not first of course in the order of our knowledge, but which takes its place as absolutely first in an ontological attempt and a philosophical resultant of all scientific reality, and which assumes precedence of a cosmology and a psychology, and I would say a rational theology, were there such a self-contradictory reality. Why, we ask, cannot the substantive universe be self-existing, self-ordered and determined in its interrelations of positions and motions as it must be because of the universal and inevitable intrinsic orders of space and time, and hold and exercise within and by itself all power of every kind, and bring forth its phenomenal products in mechanical, i. e., mathematical order from physics to psychics, from corpuscles to Sirius and Canopus, without intelligent purpose or pre-devised plan, by its sheer eternal nature, in its static and moving mechanics? Or as Haeckel says, the laws of substance? Motion cannot

be separated from matter as an entity in its own behalf; it is the way matter exists, a persistent and universal attribute or property. Hence, the "Indestructibility of Matter, and the Conservation of Energy," is the generalized formula of physics. There seems to be some ratio between the infinitesimally small material masses and their almost infinite velocity, and the immense aggregates of matter and their relatively small velocity, as the greater suns. Gravitational attraction has swept together the masses of the stars and is still sweeping the regions of space and adding accumulations of matter to suns and planets. Prof. Proctor in his "Other Worlds than Ours" in the chapter on "Meteors and Comets" says: "There are millions of very eccentric orbital systems of meteors revolving round the sun, and our earth encounters no less than fifty-six well determined systems in her annual progress round the sun. Some of the individual meteors come within her attraction and fall upon her surface. And so numerous are these bodies, that it has been calculated that the earth in passing through space equal to her own dimensions would encounter no less than 50,000 of them. These meteoric bodies come from interplanetary spaces, and form a most important portion of the solar system. The orbit of none of these systems has as yet been definitely determined. They are very eccentric, and the aphelion point of the August ring lies nearly twice as far from us as the orbit of Neptune. And this planet is said to be 2,800,000,000 miles from the Sun, 37,000 miles in diameter, and its period of revolution about the sun 164 years. It has been found that the November ring of meteors travels around the sun in thirty-three and a quarter years, and its aphelion lies far beyond the path of Uranus. The August and November systems are the only ones whose periods have been determined to any satisfaction. In the November meteor system there is a portion called, "The gem of the meteor ring." It is said to be not less than 1,000,000,000 miles in length. Its

thickness 100,000 miles and its width 1,000,000 miles, and the number of meteors in this gem cluster not less than one hundred thousand millions, and their estimated weight not less than 28,000 tons. And the weight of meteoric matter circulating around the sun must be estimated by billions of tons. As meteors fall upon the earth it must be inferred that they fall upon the other planets, their satellites and the asteroids. And likely minute particles of matter are streaming into these meteoric rings to make good the loss of what falls from them and lights upon the sun and his retinue of worlds.'' Then we must infer that space is filled with matter, also these rings of meteors are growing less in their members and in time reach their limits. But the ostensible sources of the sun's supply of light and heat are the raining down upon his surface meteoric matter, and its contraction upon itself from loss of heat. And very lately the conjecture that radium may serve to this end. It might be a question how the sun could lose its internal heat. For it can hardly be supposed that the internal heat can be greater than its surface heat, and heat motion dissipates in the direction of less heat and not in the direction of greater. This would violate the principle of motion in the direction of least resistance. Prof. Ball, in his article ''Nebular Theory'' in Encyclopædia Britannica says the sun is contracting so that its diameter diminishes four miles in a century.

Discussion 50. In view of meteoric matter ceasing to fall upon the sun, the consequence to the earth might be disastrous. Prof. Proctor argues in this way: There are very great but unknown numbers of meteoric rings circling round the sun, and these rings must interest each others orbits near the sun, and their meteors colliding come almost to rest, and so fall into the sun. These bodies of matter coming from great distances their velocities and consequently their striking force must be very great and the evolution of light and heat very great.

This is a persistent supply to the sun. Should the quantity of loose matter in space within the sun's attractive power be lessened and this luminary cease to radiate his wonted supply of heat and light, all earthly force and all earth's life might cease. The meteoric matter owes its great velocity and therefore its great striking power and the evolution of great quantities of heat and light to the fact of coming from immense distances in space. So space itself becomes a prime factor in the evolution of life and intelligence. All life on the earth may depend upon these rings and matter, circling round the sun and its members plunging into it. And this upon the fact of space distance. All is dependent on matter and motion which must be pre-supposed in supposing or witnessing any phenomenon animate or inanimate. And matter in motion presupposes space and time. How fallacious to hold that these validities have no objectivity in themselves, since they bear the outward as clearly as the inward character of necessity. Mechanics, the interrelations of matter in positions and movements rule everywhere and everything, and these validities are implied everywhere and always. Through the affections of matter expressed universally in gravitation, discriminately as chemical and other forces, are brought about by combinations, and these by action and reaction of their constituents upon one another evolve properties and manifest results not in their constituents. How in conflict with obvious facts, is the assertion that nothing can be gotten out of a thing that is not put into it in one or more of the parts composing it. The whole domain of chemistry and biology contradicts the assertion. Action and reaction are opposite and equal. The discriminating affections or aptitudes of atomic differences of matter to combine or associate together, has an equal and opposite tendency to dissociate, sometimes under very slight provocation, and almost every combination under the constraining

circumstance of internal heat motions, which dissolves almost all ties that unite differences.

All material and physical and every other difference (which indeed at bottom are all material) may be viewed as effected by the eternal motions and consequently shifting positions of the infinite numbers of a unitary substance. "The primal being, according to Anaximander, (610 B. C.) is unquestionably a unity," says G. H. Lewes, in his *History of Philosophy*. "It is one, yet all." And this is the last word of physical science. Matter in its extremest analysis yet reached, is numerical and not otherwise differentiated. A definite number of what is all alike, so and so mechanically constructed, and each one and the group so and so in motion, may constitute this or that differentiated atom; and these unlike atoms so and so chemically combined in definite numbers and each in definite motions, under such and such external conditions, result in all animate and inanimate differences. Creation, if it must be used in any intelligible meaning, and not the empty verbality of bringing into existence something from nothing, but something from something, let it be the new forms, potencies and properties consequential from composition and decomposition. The matter of our bodies is as ancient as the sun, and once probably constituted a part of the sun, but our minds are only of yesterday. The knowledge of *how* a thing could be done with thing *doing* it, and the doer of it, given, is proof that it is done. But the *how* the material universe could be created from non-existence and put into related positions and motions from stellar masses to infinitesimal corpuscles by a personal creator, or that it was created, or the creator of it is known, are neither given, nor can be mentally pictured or of necessity affirmed. Nor because the universe is given to conscious experience, does there arise therefrom the implication that it was created or began to exist; since we are under the necessity to postulate neither creation nor be-

ginning, but eternal uncreated existence. And the material space and time and ongoing universe is comprehensive of all existence that we can think of, or intelligently talk about, or there is place for. We must not suppose that words used for existence must of necessity or they do actually stand for, and guarantee, real objective existence, although so used for centuries and acquiesced in by the great majority of the people. To transcend the universe in thought is impossible. Therefore to intelligently and really posit its creation, its creator, or beginning, is impossible, and to do so is mere empty verbiage. An imminent creation which confuses or identifies the universe with its creator, is as unthinkable and no more possible or needful, or a necessary averment, than is a transcendent creation which separates creator from the universe created.

So inveterate is the allegation of creation of the universe from custom and habit, initiated as it was for Christendom by a people without any critical knowledge of the universe as to its extent or content, nor of the denotation of the world, if creation is a literal translation of it, for we have no possible realization of creation or creator of the universe, although their universe was little more than a flat earth of a few miles in extent; and some very learned persons still believe and teach the Hebrew creation. But when the learned attempt to set forth the creation in a conceivable manner, their effort either virtually denies creation or results in something as inconceivable, and at most is a mere *ipse dixit*. But it is of as much authority as the Hebrew cosmogony, which *ipse dixit* is put forth to sustain it. Thus, Sir W. Hamilton, Metaphysics, Lecture XL, says: "The quantum of existence which is realized in any object,—that we cannot represent to ourselves, either as increased, without abstraction from other bodies or as diminished, without addition to them, in short, we are unable to construe it in thought, that there can be an atom absolutely added

to, or an atom absolutely taken away from, existence in general. Make the experiment. Form to yourselves a notion of the universe; now can you conceive that the quantum of existence, of which the universe is the sun, is either amplified or diminished? You can conceive the creation of a world as lightly as you conceive the creation of an atom. But what is creation? It is not the springing of nothing into something. Far from it;—it is conceived, and is by us conceivable, merely as the evolution of a new form of existence, by the fiat of the Deity. Let us suppose the very crisis of creation. Can we realize it to ourselves, in thought, that, the moment after the universe came into manifested being, there was a larger complement of existence in the universe and its author together, than there was the moment before in the Deity himself alone? What I have now said of our conception of creation, holds true of our conception of annihilation. We can conceive no real annihilation,—no absolute sinking of something into nothing. All that there is now actually of existence in the universe we conceive as having virtually existed, prior to creation, in the Creator.'' Then our belief cannot consistently exceed our capacity and power to conceive, is a fair and logical inference from the above quotation. And as a real creation of the material universe is inconceivable, and its evolution from the Deity, either by so much the less of Deity, which would seem to be a transmutation, or his continuance undiminshed and unchanged, which might be Pantheism. Either alternative is equally inconceivable, therefore unworthy of belief. Or another exposition of the above quctation. God is diminished by the complement of existence that makes up the material space and time universe, and there was no actual, bona-fide creation at all. But its meaning is and ever has been and was so understood by the Hebrews, to signify a separation of their Jehovah from the world. Perhaps by fission, this comports with the indignity and absurdity of the

quotation; or a devolution, a metamorphosis, or "evolution" of the Deity into materiality, then divide into suns and planets, asteroids, comets and meteoric portions, from great canopus equaling a million of our suns, down to the small dust of the balance. And then a farther development of the materialized Deity into the Upas, Apple and Orange tree, the Cobra-de-capello, the Lion and the Lamb, Torquemada and Jesus. Or the Deity and the material universe are one and not two, have ever been one and inseparable, and Pantheism or Panlogism emerges, whichever one chooses. A real creation is denied. The imminence of Deity is a consubstantialism. And transcendent creator of the universe is impossible, for no existence can be conceived out of or beyond space and time relations, or their cause; that is, these verities are pre-supposed in supposing any existence whatever. "Imminence," says J. D. Morrell, "implies the unity of the intelligent principle in creation in the creating itself, and of course includes in it every genuine form of Pantheism." Here, the "intelligent principle" seems not to be personalized. And taken to mean the necessary space and time interrelations of existence and its motions, which are laws or fixed and definite methods by which all becomings and changes take place, and these forms and their functions being new presentations, are called creations in a secondary sense, expresses my own conviction. But I should have no use for the term Pantheism. Human and all animal intelligence follows, copies, or imitates nature's laws or ways in productive acts and does not institute them. Intelligence has to seek out *how* to accomplish its purposes, has to discover what the unintelligent but necessarily intelligible laws of material procedure, dictates in order to become an intelligent producer. This indicates that it is not an ordainer of ways and means. Intelligence is functioned and individualized in and by a definite material construction or organism without the purposive element of a

final cause in the constructing. There is no finality which dooms the universe. As it had no architect or beginning, it can have no annihilator or termination. Intelligence is one of its local issues, not its creator or constructor. Its highest achievements *find* the laws by which its calculations are conducted and purposes realized. Do you say: yes, finds them in itself. True, and because they are involved in the not-self, of which the self is the offspring with the added quality of consciousness. Consciousness is the meaning and limitation of the self. There is not a universal intelligence, for intelligence is numerical and individual. But there is the universal intelligible, since all things—all differences, are interrelated, proximately or remotely. The organism functionates the mind or consciousness, as the mechanics of the watch copies time-keeping, functionated by the motions of the stars. To the capacity of mind nature mirrors or reveals herself, or the intelligible realizes itself in intelligence. There is good reason to deny what is not self-evident, or not of necessity affirmable, or not of scientific certitude, or no credible witness can testify to of his own knowledge. In the construction of the human organism which functionates life, sensation and intelligence, and any other animal or vegital organism, and in space, there is posited the material universe, everywhere in motions and change of forms, and the production and cessation of properties and qualities, there is no transcendent or imminent creator or prepurposive designer or artizan intelligently working to realize a final-cause plan, that can be established by any of the above mentioned ways of proof. This view is not in harmony with the doctrine of Anaxagoras, who is declared by Diogenes Laertius to have said: "All things were mixed up together; then mind came and arranged them all in distinct order." And the prevailing opinion of Christendom is that the arrangement of all things into one universal system, was effected by mind, or intelligence like, and

working as, the human (for we have no other test of mind) granting an absolute creation from non-existence, and the elementary state to be a chaos, which positions are gratuitously taken.

The necessary affirmation of existence eternal and uncreated, leaves its identification and realization to be fixed in the substantive space and time universe, of which we know something, and a part of which we are, and other than, and beyond which, we know no existence, and have no evidence that we have any capacity for knowing. And the universe is not, and it gives no evidence that it ever was, or could be chaos. It has in itself as conditions of existing, eternal elements of order, and can no more be out of order than it can exist and be in motions out of space and out of time. And intelligence has no power to absolve into absolute disorder or put into no order. Order may be so intricate and involved as to defy the ability of any intelligence, as yet to compass and calculate. But the axiom "the universe is in space and time order" negatives any entanglement as being in absolute no order, or not in space and time order. It is the necessary order of the universe that leaves no ground for the averment of an orderer distinct from and other than the eternal order of the universe itself. What the human organism witnesses to in its own exemplification is that itself, the organism, in its complex of material mechanics, evolves or produces, through the convergence of many diverse physical contributions, and an aiding environment, the attributes, properties, or qualities of life, sensation, and intelligence. And it does not witness to a transcendent or imminent conscious planning and working agency not of the organism; or itself being other than the organism; or to particularize other than the consciousness functionated by the organism; or that consciousness or the self is not effectively involved in the working mechanics of the organism. That it is so involved and so produced, seems as evident as that elec-

tricity is produced by the working mechanics of the dynamo. But *how* or *why* the one should be produced by its evident cause is as much an unsolved problem as the other. And it is no more a forced conjecture that one is the product of a *Deus ex machina,* than the other. And the human organism seems as well adapted to realize in the concrete and to individualize conscious intelligence from the universal and necessary abstract intelligible, as the dynamo to realize and localize the general perhaps universal something called electricity. If our intelligence extended to minutest details of the material chemico-mechanics of our bodies, the nature of these mechanics and the nature of matter, we might as plainly see that life and intelligence arise or are involved therein, as knowing the form of an incline and its passive attitude and the form and motility of water, the latter must flow down the former.

What can be said against matter being eternal and uncreated, and unevolved from a Deity, and in motion as mode of existing and its nature definitely to combine and dissolve and recombine, which would of course be impossible without motion, and in, under and by its conditions space and time, without which matter could not exist nor be in motions, and from its nature and circumstance all phenomena whatsoever arise as they seem to? Nothing but the *ipse dixit "Impossible."*

Discussion 51. To define and determine the extent of and grounds warranting the entertainment of *belief,* we shall quote Parson's exposition of the Creed, not fully or continuously, but interruptedly, yet sufficiently to gather his method of procedure and reasoning, which are as clear and logical as anything of the kind I have met with, to see if on his exposition of belief, we have any warrantable grounds in testimony to believe a cretion or creator of the universe; and to point out some deficiency in his enumerated conditions to warrant belief in what he advocates, but extending no farther than

the creation of the universe and its creator.

"Belief is defined to be an assent to that which is *credible* as *credible*. This assent is primarily of the understanding. The term *credible* excludes all self-evident truths (whether known directly by our reason or our senses) and matters capable of scientific proof either from their cause or their effect; for such things are called self-evident, or scientific, not credible. And on the other hand there are matters which though apparently true, still leave room for doubt, and these are called *probable*. But where a thing is propounded to us as neither self-evident nor evident to our senses, nor scientifically certain, and yet raised above probability, not by a manifestation, but by attestation of the truth, this is said to be *credible* and assent to this is *belief*. Credibility of objects differs according to the authority of the testimony on which it depends; and this again on the authority of the testifier, and his authority on his knowledge and his goodness(as this is an equivocal term, we would rather say integrity or honesty). Every one who believeth any thing doth assent unto it as to that which is credible, and therefore all belief whatsoever is such a kind of assent. He which sees an action done knows it to be done, the person to whom he relates it believes it; in which case that which is credible is the object of belief in one, of evident knowledge in the other. To make the definition of belief full we have added to the thing believed that whereby it is properly believed, (that is, the knowledge of the testifier).

For the explication of the same, some further observations will be necessary. For if that which we believe be something which is credible, and the notion under which we believe be the credibility of it, then must we first declare what it is to be credible, and in what credibility doth consist, before we can understand what is the nature of belief. Now that is properly credible which is not apparent of itself, nor certainly to be col-

lected either antecedently by its cause or reversely by its effect. For those things which are apparent of themselves are either so in respect of our sense or our understanding, which are not termed credible, because evidently true. The propositions in mathematics and conclusions in other sciences are not said to be *credible,* but scientifical, and the comprehension of is not *faith* but *science.*

Besides some things there are which, though not evident of themselves, nor of necessary connection to their causes or effects, but yet appear to most to be true, but still leaves a possibility of falsehood with it, and therefore doth but incline to an assent. In which case whatever depends upon real arguments is not called *credible* but *probable,* and an assent to such a truth is not properly *faith* but *opinion.*

But when any thing propounded to us is neither apparent to our sense nor evident to our understanding in and of itself, neither certainly to be collected from any clear and necessary connection with the cause from which it proceedeth or the effects which it naturally produceth, nor is taken up upon any real arguments or reference to other acknowledged truths, and yet to us appeareth to be true, not by a manifestation but attestation of the truth, and so moveth us to assent not of itself, but by virtue of the testimony given to it; this is said properly to be *credible;* and an *assent* unto this upon such *credibility* is in the proper notion, *faith* or *belief.*

We have thus defined and illustrated the nature of faith in general, so far as it agreeth to all kinds of belief, whatsoever. And being we have placed the formality of the object of all belief in credibility, it will clearly follow that diversity of credibility in the object will proportionately cause a distinction of assent in the understanding, and consequently a several kind of faith, which we have supposed to be nothing else but such an assent.

Now the credibility of objects by which they appear fit to be believed, depends upon the *authority* of the testimony on which it is founded. For we have no other ground for matters of mere belief than the testimony on which we believe. It is therefore necessary to consider in what the authority consisteth. The strength and validity of every testimony depends upon the authority of the testifier; and his authority is founded upon his ability and integrity; his ability in the knowledge of that which he delivereth and asserteth, his integrity in delivering and asserting according to his knowledge. He may deceive us by being ignorant of the truth. He may think that to be true which is false, and so deceive himself and us; he may be dishonest and unfaithful, and himself be not deceived; he may deceive us. But whoever is so able as certainly to know the truth of that which he delivereth, and so faithful as to deliver nothing but what and as he knoweth, he, as he is not deceived, deceiveth no man. And thus the authority of every testifier or relater is grounded upon his ability and integrity.

There is a double testimony; the testimony of man to man, and the testimony of God to man. Human faith is an assent unto anything credible merely upon the testimony of man. Seeing then our belief relies upon the ability and integrity of the relater, and being the knowledge of all men is imperfect, and the hearts of all men are deceitful, and so their integrity to be suspected, there can be no infallible ground of human faith. Divine faith is an assent unto something as credible upon the testimony of God."

I have now made sufficient continuous quotation to serve my present purpose.

Our author has paid no regard to the principle of antecedent probability or improbability of the events or things the personalities and characters and powers thereof, for which he solicits universal belief, on the ground

of the credibility or worthiness of belief made so wholly by the credibility of the testifiers. There can be no competency in the testifiers or their testimony to render credible events which confessedly have never occurred but once, and the uniformity of the laws of nature have either been violated or transcended if they have occurred once, against which the antecedent improbability is as infinity to one. The credibility of a declaration depends upon the general intelligence of the narrator, as well as upon his particular information touching its subject matter, and upon the general intelligence and freedom from bias of those receiving the testimony. Persons of little general intelligence believe many propositions that large general intelligence would reject as against any mere verbal testimony. While large general intelligence facilitates belief in some propositions which general ignorance would reject. Darwinian organic evolution is an instance. "Notions of the beginning and end of the world entertained by our forefathers are no longer credible." *Huxley.* "Assertations for which there is abundant positive evidence are often disbelieved, on account of what is called their improbability or impossibility. The positive evidence produced in support of an assertion which is nevertheless rejected on the score of impossibility or improbability, is never such as amounts to full proof. It is always grounded upon some approximate generalization. The fact may have been asserted by a hundred witnesses; but there are many exceptions to the universality of the generalization that a hundred witnesses affirm to be true. We may seem to ourselves to have actually seen the fact; but that we really see what we think we see, is by no means an universal truth. The evidence then in the affirmative, being never more than an approximate generalization, all will depend upon what the evidence in the negative is. If the approximate generalization leading to the affirmative are, when added together, less

strong, or in other words, further removed from universality, than the approximate generalizations which support the negative side of the question, the proposition is said to be improbable, and is to be disbelieved provisionally. If, however, an alleged fact be in contradiction, not to any number of approximate generalizations, but to a completed generalization, grounded upon a rigorous induction, it is said to be impossible, and to be disbelieved totally. This is the logical canon of the Grounds of Disbelief." *Mill's Logic, Chap. XXV. Book III.*

Apply this test (and it is pertinent to the denial of the credibility of the allegation of any objective facts not verifiable by experimentation) to the alleged facts of the Apostles Creed: "Conceived by the Holy Ghost, born of the Virgin Mary," with a completed generalization against their truth in the negative. This fulfills the condition for total disbelief of the quotation from the Apostle's Creed, so called. That is, the completed generalization grounded on a rigorous induction means that no person of all that have been begotten, or have been born, have been begotten by the Holy Ghost, or have been born of a human virgin. And consequently no testifier or testimony can render the quoted words of the Creed credible. It may be objected that the generalization or induction is not complete by the one exception alleged, therefore the grounds for the total denial of credibility, are not fulfilled. This is a mere quibble. There is no exception until a case is proven, and this rests upon its asserters with all that have been begotten by other agents than the Holy Ghost, and of all that have been born, there is no parthenogenetic human, or if you will, divinely theistic, begetter. With all this positive evidence up to the present time to the negation of one exception, the competency and veracity of any testifiers or testimony to establish one instance of begetting by the Holy Ghost, or one instance of uterine birth

from a human virgin, are incredible. The rejoinder would probably be, the testifier and testimony in proof of the facts stated and criticized, *viz*: begotten by the Holy Ghost and birth from a human virgin, were primarily divine and not human. To make this statement *credible* to adult persons of critical intelligence in the uniformity of nature's laws, or the unexceptionable interrelation of the human sexes in the propagation of the human species, is a task of impossible achievement, when there is taken into account and duly weighed the facts that for any exception to this uniformity, whatever may be claimed for a divine testifier, and testimony to the one exception. It is from human testifiers alone, all of whose knowledge our author declares is imperfect, and the hearts of all men are deceitful, and whose integrity is to be suspected, and there is no universal ground of human faith, that the testimony comes to us, that there is a divine testifier as well as that testified to. Our author says: "That is credible which is not apparent of itself, nor certainly to be collected antecedently from its cause or reversely from its effect, or made evident by argument, or reference to other truths, or self-evident, yet notwithstanding appears to us to be true, not by manifestation but by attestation, and as so moves us to assent not of itself, but by virtue of the testimony given to it; this is properly said to be *credible*, and assent unto this upon such *credibility*, is in the proper notion *faith* or *belief*." But he has no direct testimony of a divine or human testifier to the unnaturalness of the averments aforesaid, but at the best only second-hand, or more likely more remote still, from the alleged begetter and the virgin-conceiver, who never had a thought of the improbability of any thing or any event declared to them by their recognized religious teachers, as a majority have not now, whose testimony, for the truth of probable events that might be and are evident to the senses and of common occurrence, is unreliable by the admission of

our author, who has, notwithstanding, called to the witness stand to prove or make credible events, whose probability is antagonized by the begetting and uterine births of the human race. That there was such begetting or a human virginal uterine birth either of a human or divine being,there is no direct and unequivocal testimony in the New Testament, by such witnesses even as he has called. That which is most direct as to such a begetting is not by the begetter, but by a foreteller of what *shall be,* by an individual of an order of being whose real objective existence is as problematical and improbable as that of the alleged begetter. And so anthropomorphic is the act as to be expressed by stating the usual human form and manner of the act. And the accomplishment of the act and the conception has the authority for its reality that a dream can give. And all this for which such testimony stands and makes credible and moves our assent on the sole ground of the credibility of such attestations, is said to have been done to fulfill an ancient prediction that a virgin should conceive. And here we obtain a clue to the instigation of the testifiers of all the marvels of the New Testament for which there is no corroborative testimony.

Discussion 52. A creator of nature, not from necessity to produce a nature such as it is, but by absolute arbitrament such as arbitrary and irresponsible power should determine, might, presumably, make the antecedent of any birth of any life or any kind of life such as he pleased. But that nature or the universe is not a creative product, but is in itself eternal and uncreated, we think has already been shown in this essay, and its causative relations to effects fixed beyond any power to change or make void. It is now acknowledged, says Mr. Mill, by nearly all the ablest writers on the subject, that natural religion is the necessary basis of revealed. But this would rule out the Hebraic and Christian religions. For these upon their very face purport, and by constant

implication declare themselves to be revelation at first hand, and in no sense or degree acknowledge dependence on nature for their source, sanction or corroboration, or present nature in proof of the divine existence. It is by revelation that the creation of the universe was made known. The worship of nature, or natural religion, would assume the self-supremacy of nature, and deny its dependence upon a creator and master. There may be, and there are, grounds for a religion of nature as supreme, but in this there is no *theos* or theology, and it admits of no interference with the laws of nature. And as Bacon says, natural theology is incompetent to ground any affirmative knowledge. Inanimate nature has no final cause or causes for its changes and production of forms and their functions, but only efficient, and these not intelligent, but intelligible.

I have already dealt, in part, with the assumption of a *created* nature, or the material, space and time universe, and found it to be utterly gratuitous on the ground that eternal *uncreated* existence is a necessary, self-evident and primal postulate. Or perhaps rather, the unavoidable conclusion from the fact that there is existence. An absolute created existence from non-existence, or Sir W. Hamilton's mythic mystic transubstantiation of a spirit-deity into the material space and time universe without either pantheism resulting, or loss of identity, integrity or completeness of personality to the deity, are not of necessity assumed nor demonstrable propositions, nor reasonable nor conceivable. Nor can it be shown that a grain of matter has ever been created, from which the monstrous step might be taken to the creation and order of the universe. And when we have eternal uncreated existence given from the necessity of existence and of thought, the assumption of creation is gratuitous and superfluous in the extreme. And being propagated for belief on which to found the interference of a creator, it behooves to be proven clearly and con-

spicuously in order to ground the obligation to believe. For I take it no creation, no creator. Adopting the first two axioms of Spinoza, "Everything which is, is either in itself or in some other thing. And that which cannot be conceived through another, must be conceived in itself." We cannot conceive matter in the creator of matter, nor can we conceive a creator of matter, nor is their need in matter itself or in the thought of it, or its order or becomings, to aver its creation. Then theology rests on no better grounds than the Theogeny of Hesiod. And there is no more acute theologian than Cicero in his Nature of the Gods. And one instance of the imitation of Hesiod in his genealogy or origin of deities is given in the New Testament and ably defended by Parsons on the Creed. In searching for cause, which is the universal tendency of all human intelligence, and is the germ of science and philosophy, the undeveloped efforts to surmise *how* things came to be, and came to be as they are, lead to the assumption of Gods suggested by man's ability to produce some changes, and his Gods were anthropomorphic as creators and controllers of all things. But in the growth and extension of science and of criticising thought, the conclusion has been slowly reached that there are no such existences as childish fancy conjectured. But as many guesses of the past linger into the future of growing fact, and now as then are governing principles of practical life, polytheism with a part of our race has given place to so-called monotheism. But in the Christian system there lingers a veiled tritheism and a theogony which discovers its parental derivation. There is an atavism in Christian theology. The further growth and extension of knowledge by which all Gods but one have been abandoned, will lead to the evident needlessness of the survival of one as of the many. And the utter impossibility of any proof of the creation of matter, and the objective certainty attested by the subjective necessity of there being eternal uncreated existence, and the eter-

nal and supreme verities and validities not susceptible to the accusation of having been created, that must condition and are presupposed in supposing any existence whatever, creator or created,—space and time; and the conviction not contradicted by any experience, that the universe has and can have no superior or master, but embodies and exercises all power and all cause and all effect in its own underived right of self-existence and becoming, will lead the higher philosophic thinker to abandon the advocacy of a creation and a creator. There must be eternal uncreated existence, as we have so often said. The universe is *the Universum* of existence and of being, the comprehensive all, self-evident, self-ongoing, self-enduring without waste of substance or deterioration of power, for what exists without beginning must continue without ending. All becoming and ceasing, all life and mind and intelligence and feeling, and power of thought and deed, are in and of the universe. There is no transcendent, and the imminence of the intelligent principle is involved in it, as is every principle, and in no sense is foreign to it. There is no more a transcendent concept possible than existence. There is one eternal existence and being of infinite diversity in unity.

Besides the universal tendency of man to seek a cause, there is in the norm of human nature a feeling of dependence flowing from the consciousness that he did not construct his body and was not the author of the functions, the very sensuous, intelligent self, and has no direct volitional power to maintain the body's integrity or preserve it from the liability at any moment to become diseased, and the certainty that at some time not very remote from the present, it will become like every structure of nature's building disintegrated or dissolved into its material elements, and its function, the conscious, cherished self, become, as seems to be the case, as extinct, non-existent, as before the beginning of the structure of the body, the parental conception. This, to most persons,

is the acme of mental distress. And there is a seeking, even longing for some ground of relief and of assurance that our fears shall not be realized. Hence there has been devised and added a supplemental revelation in the Christian scheme, some 2000 years later than the first, in which the particular point, as well as some others of man's indefinite continuance (but where and how not definitely stated) after death was clearly and distinctly enunciated and provided and some 2000 years before our time, for man's comforting assurance that death to human consciousness is only seeming to the beholder, and not real to experience. Nay, it is but the way into a larger and fuller personal life by the grace of the creator of the universe, through our believing acceptance of it, and obedience to, the said revelation. And I am not going to deny that in our need there may come to us from our strong and sincere faith, the consolation and even ecstatic joy that has been manifested and declared now and then. Men and women have seemed happy dying in flames and upon the rack in defence of their religious faith. But a suspicion arises as to the divine object of their faith bestowing this happiness upon them as reward and guaranty that they have the right conception of his will and are fulfilling it in their martyrdom, since it comes equally to those thus maintaining opposite views of that will. It finds its reasonable exegesis in the subjective psychical state induced by our faith without dependence upon the objective verity or its supposed source. For we all know that we have been as confident in our belief of the truth of certain propositions and would have staked our lives upon them, that turned out to be utterly false, as in our belief of propositions that proved to be true as we held them. For strong faith in what is only speculative and cannot be verified objectively, has all the effect upon believers being subjectively true only, as it can have if objectively true and real. Theistic and religious faith is a subjective state, and for

its most potent effects rests upon a mental picture of faith's own drawing or adoption. Witness the asceticism and hermit life of Christian Europe, in Lecky's History of European Morals. "The most perfect hermits are supposed to have been many days without food, many nights without sleep, and many years without speaking." *Gibbon's Decline and Fall;* and all on the coercing authority of a theistic and religious mental picture whose objective verity never was and never could be realized. And this constraining subjective authority taken to be of objective certainty, appertains to enthusiasts of all theistic religions, whether their deities are many or one, whether anthropomorphic or ideal, or beyond any satisfactory picturing, or sensuous as idols of human selection or formation, or transcendent or imminent or both, and makes all religions equally true to their devotees and equally false to their rejectors; because all are equally destitute of any objective verification. But all theistic religions claim to rest upon the same foundation, *viz*: revelation, in some way communicated. We have no proof that mind or spirit is a self-existent or created entity, and can exist independently of matter. And if there should be intelligences on other planets and beyond the solar system, we have no reason to believe they are less dependent on matter as their cause than ourselves. And this does not argue against the possibility of a continued future life after this, but rather in its favor, on the ground that matter is self-existent and eternal, and not dependent on the will and caprice of a creator and superior, for it has no superior and is without creation. And as matter and its relations have evolved this life, they may continue it. The foundation, the warp and woof of our life is in the dust and its moving mechanics. But the dust is eternal and causeless.

All matter hangs suspended in space and is ever moving. What could be more insecure. But its security

is attained through opposing tendencies and forces.

"All nature's difference keeps all nature's peace." Its persistence in existence has all the guaranty that what exists without beginning to exist must continue without ceasing to exist can give it. The living matter of our bodies beginning to live in our parents' bodies, we know not how remote, and charged with their traits and tendencies, and through that strange capacity of organized living matter called atavism, recalling from remote ancestry some bodily feature, or complexion, or mental trait, and imposing these upon present offspring, that had been forgotten and not manifested upon intervening posterity. This inheritance of mental characteristics as well as bodily features makes for the truth of traducianism rather than creationism. The living matter of our bodies is ever dying and being eliminated, and dead matter entering and becoming living and functioning the continuance of the identity of ourselves—the personal conscious intelligence. While this conscious self is ever changing, losing by forgetting, and filling by a flowing inward of continued experience, yet remaining essentially the same as long as incidents of the past are sanely felt to be a part of our history, as the integrity of the body is continually disintegrating but new building matter is as constantly filling the old places and the same physiological and psychical work with slight difference, the bodily form and features remain cognizable to ourselves and our neighbors. Matter is the only substance. Causation is limited to phenomena, says Fichte, and extends not to matter, which is eternal and uncaused. As there has been no beginning of substantive existence, so there has been no beginning to change, therefore no beginning to phenomenal existence. To speak of a first cause is as absurd as to speak of a first existence or a first time, where eternal is the qualifier, which denies beginning. Effect is as old as cause, and both are ageless. "Physics knows nothing of causation except that it is the invaria-

ble and unconditional sequence of one event upon another.'' *J. Fiske.* There exists but one substance, and thought and extension are not substances but attributes, says *Spinoza.* Motion, which is the eternal way of existing of matter, introduces into bodies definite internal structure and external form, and consequently co-ordinate properties and qualities appear. No matter and no matter in motion, no life and no conscious personality.

As critical observation and reflection advance to experimental tests and mathematical proofs, as the composition of atoms of all material substances, and the infinite difference of properties and functions arise from what in the last analysis yet reached, is only positional and motion differences in their relations of one undifferentiated matter, except numerical difference, is an illustration. Properties, qualities and functions, are sequences of material combinations or mechanics. Note the whole realm of physics and chemistry and the productive arts for obvious proofs. An intellectual and ethical human life, the ethics embracing the entire field of animal sentiency, are the highest evolved products of materialism. For materialism connotes the entire complement of existence knowable and knowing. Life finds its source and seat and capacity in material relations. This is obvious. And he who would argue for the immaterial or spiritual as cause and source of the material, must set aside the obvious and persistent, for what appears only transcient as a function of local organized matter through chemical placement and movement. And the strength of its argument is this: Matter, or we will say, unconscious nature, cannot evolve consciousness and the knowledge of itself. And he will cite many witnesses to the same negation.

Discussion 53. By progressive evidence that nature is complete and all comprehensive in itself, and competent cause of all becomings, the spiritualistic thaumaturgy, or theistic causation which was never an intelli-

gible explanation of anything to anybody, for no one knows or pretends to say *how* such cause operates, or knows that it does or did operate, or knows there is or was such a cause, has been gradually dropped out from school text books on science, and is weakened in its hold upon scientific culture. For the scientific is the historical or inductive method of study which discovers facts as its premises by critical observation and experimentation, and does not invent them, and from its premises only legitimate inferences are drawn, i. e., the unknown is discovered through the known. And not the ontological method which is the theistic and the religious, and assumes the unknown, the not self-evident, and the not of necessity postulatory to account for the unknown, from which any inference, one as well as another, may be drawn to satisfy the purpose of its assumption. Hence, God is assumed as the author of opposing theologies and religions and endowed with conflicting characters. And theism lingers as a relic of developed barbaric animism, and dominates Christendom. "Spiritual philosophy has influenced every province of human thought, and the history of animism once clearly traced, would record the development not of religion only, but of philosophy, science and literature." *Ency. Brit. 11-57.* The method of deductive reasoning is the mathematical, whose principles or premises are axiomatic, the *a priori.* But a creator or creation is not so found. Descartes' method was the ontological. He sought to discover an intuitive truth whose certitude would survive every critical doubt that could be urged against it, as a fundamental principle of a new philosophy, as skepticism had laid aside the ground principles of ancient philosophies. He found the certitude in his own consciousness, any doubt of which only confirmed its certainty, since to doubt involves the certainty of consciousness as a state of the subject. And he expressed it in the formula: "I think, therefore I am." But how far is this form a universal and necessary

objective existence on which alone can repose the superstructure of philosophy, which is defined: "The body of highest truth; the organized sum of science, the science of the most fundamental matters; the matter, form, causes and ends of things in general; a comprehensive synthesis of the doctrines and methods of all knowledge; a coherent body of theorems concerning the Cosmos, and concerning man in his relations to the Cosmos, of which he is a part." It is true that the subjective certainty of personal consciousness is beyond the reach of doubt to disturb, is perhaps the first truth to be established in an axiomatic formula, as consciousness in its direct testimony by necessary affirmation, and indirect testimony through the senses, surrounds and interpenetrates, and is our only test of personal existence, which existence in general and its conditions, space and time, are the subject-matter of all science and philosophy. Of his own consciousness he was absolutely certain. And he saw in this as he says, the assurance that to think, it was necessary to exist, for non-existence could not think. And from this he drew the general conclusion that, all things which we clearly and distinctly conceive, exist. And as he attentively examined what he was, he observed that he could suppose that he had no body, and there was no world nor any place in which he might be, but could he not suppose that he was not, since he thought. That he had the positive power to think his body or the world non-existent, may be doubted, unless one has the positive power to think non-existent that which is at the same time existing, constituting and streaming into his consciousness through his senses, as well as general sense of life as the product of all the vital processes, constituting the bodily perception, and which is expressed in one word —the *coenesthesis*. The most one could affirm is the negation of positive thinking—not to think of body or the world. But this is not the same as actively thinking them non-existent. His ontological method to the exclu-

sion of the inductive, led him to the mistake of deducing existence in general from consciousness, instead of finding consciousness in existence, as the first universal and necessary postulate. If he had traced his consciousness regressively he would have found that it was in and implied the antecedent existence of his body and an indefinite line of past progenitors, and the beginning of his body was in his mother's ovary before his mind existed. And had abortion been produced, or growth and development of his body been arrested, there never would have appeared the brilliant and famous intellect of Rene Descartes, who demonstrated "that all parts of a geometrical magnitude could be represented by algebraic equations, which wrought an entire change in the mathematical and physical sciences." And reasoning from all the data that we have, that is not manifestly fictitious or lack substantial proof, and from analogy, that properties and functions of compounds are new, and do not exist in their constituents, his mind was the function of the complex of the material mechanics constructed in his mother's womb, and wrought by the powers of nature without a supernatural, which is not a provable factor anywhere at any time. In this construction, as in all that takes place *in utero* in animal life, and indeed, in all the processes of germination, growth and development of vegetative life, and in the form and coloring of the floral world, there appears involved and operating the most acute and discriminating constructive intelligence. Is this intelligence in the matter thus active, or is it in some remote existence, or is there an intelligent agency imminent in the matter but not material, or is the constructive force involved resident in the relationship of all the agencies engaged in the operations, and is not properly and really conscious intelligence such as the thinking out and guiding the pen in this statement, but is of the prolific and ample source from which our own intelligence is individualized and has its working, and

from which all becomings arise—the cosmic nature in its own original right and power? For sun, moon and stars, are involved as producing factors, and space and time as conditioning factors in every man's intelligence, and in the form and fragrance of every flower.

Descartes reached conclusions that his premises did not warrant. For he says: "I thence concluded that I was a substance whose whole essence or nature consists only in thinking, and which, that it may exist, has no need of any place, nor is dependent on any material thing; so that I, i. e., the mind by which I am what I am, is wholly distinct from the body, and is even more easily known than the body, and is such, that although the body were not, I should continue to be all that I am. And as I observed that in the words, *I think, hence, I am,* there is nothing which gives me assurance of this truth beyond this, that I see very clearly that in order to think, it is necessary to exist. I concluded that I might take as a general rule, the principle that all things which we very clearly and distinctly conceive, exist." And he goes on to say, "that he saw that his being was not perfect, and there must be something more perfect than himself. And has a clear and distinct conception that he must hold this notion (of some thing more perfect than himself) to be placed in him by a Nature that is in itself more perfect than himself, that is to say, in a single word was God." And by the above reasoning he had established the objective existence of God, with power and intelligence to create, and put into and preserve in orderly operation as it is, the material space and time universe, deducing all things ontologically from the intuitive subjective truth of his own consciousness. But how could, or why should, a perfect cause produce an imperfect effect? He says he is a substance whose whole essence or nature consists only in thinking and its existence has no need of any place. But if there be substance, or thinking, must they not be *somewhere,* or can they be, and be

nowhere? And thinking evidently implies an individualized process taking place in something, for it has its beginning, continuance, its changes and its suspension in dreamless slumber, its anesthetic abeyance, and its final obliteration in death, so far as it is objectively traceable. And time is presupposed as well as place. It is a localized effect and must have its cause. If one asserts that thinking is never suspended nor extinguished, the burden of proof lies upon the asserter, for his position is not evidently true. I can well conceive that the I, or self, or subject, is confined exclusively to *consciousness* and does not include the *thing* that thinks, for that may not be conscious as that which furnishes water is not aqueous, nor the *process* that functionates the consciousness, which to me, is material and cosmic. If one affirm an immaterial entity, which has been well defined as an ontological chimera, is that which thinks and is conscious, and is the I, the self, or subject, he must validate his affirmation. And if he say, this is a needful postulate, because the whole unconscious cosmos is not a competent cause of consciousness, for what is not in the thing cannot be gotten out of it. Conceding this in some sense the effects need not be like their causes in their form, properties, powers, or capacities. The causes of acidity are not acid. And the causes of intelligence need not be intelligent, but only intelligible, because they are and must be orderly interrelated, and this suffices for my present purpose. And the laws of nature are no more than these interrelations. Thinking belongs to, and takes place in a living organized animal body, and is not known separate and apart from such body. "All organized living human bodies are composed of parts similar to those composing inorganic bodies, and no others are known to be involved, and which have themselves existed in the inorganic state and will pass into that state again. *But the phenomena of life which result from the juxtaposition of these parts in a certain manner, and the motion of these*

parts, bear no analogy to the phenomena which would be produced by the same elements related in a different manner." *Mills Logic.* The time-keeping property of the mechanics of the watch whose motions of the hands are adjusted to correspond in time-order to the axial rotation of the earth, is conceivable apart from the material mechanics which functionate the motion of the hands, i. e., the time-keeping property, and is that for which we most value the watch. But the property is absolutely *non est,* without the mechanics. So without the material mechanics of the body, we cannot affirm the conscious self, or subject. But the mechanics are not the subject.

Descartes maintained that the certitude to us of God's existence and creative power is ideally and really demonstrable as the three angles of a triangle are equal to two right angles. His test of certitude was that, whatever we clearly and distinctly conceive or have an idea of has an objective existence. Since the idea could not arise in us unless its real entity were in the object. The conception of God as of all geometrical axioms is innate. By which he means that all minds think in the same forms with the same definite contents when certain provocations or stimulants are presented to them. The substance in which thought immediately resides is called mind or spirit. The substance which we understand is supremely perfect, and in which we conceive nothing that involves defect or limitation of perfection is called God. All things are in objects which we clearly conceive to be in them. Whence it follows that the objective reality of our ideas requires a cause in which this same reality is contained. In the idea or concept of a thing existence is contained; because we are unable to conceive anything unless under the form of a thing which exists. And in the concept of a being sovereignly perfect, perfect and necessary existence is contained.

These statements are taken from Descartes' Medita-

tions. He calls them Definitions, Postulates and Axioms, and thinks he shows that the existence of God, his creative power, and such other attributes as he conceives belong to him, are as demonstrable as the three angles of a triangle are equal to two right angles. It was his aim, he declares, to write nothing that he could not give exact demonstration of after the manner of the geometers.

There is probably no word standing for an objective entity, concerning which men (if they are intelligent and conscientious) feel more certain that their notions of existence and attributes have no real correspondence to the actual entity, than the word God. Consequently the word God with any definite meaning attached, is the farthest from the certainty of a demonstration. Descartes entered upon his philosophy with a self-evident truth, viz: "I think, therefore I am." His universal inference from this was, with all its guaranty of certainty attaching, that if I think of anything the thing must exist to be the cause of my thinking it; and whatever I clearly conceive to be in the thing must be in it. For it may with truth be affirmed that all things are in the objects which we clearly conceive to be in them. For God has wrought the self-evidence into the nature of every human soul." So if I have a clear idea or mental picture of a centaur, then there must be a real centaur to be the cause of the idea of it in me. So there must have been real witches and devils to be the cause of the conception of them in Luther and the clergy generally who advocated their buring. And John Wesley was one of the latest supporters, says Lecky. The idea of God is not definite and the same in all minds like an axiom or the demonstration of a problem. We do not feel the necessity to pre-suppose the existence of God in order to suppose the existence of the world, as we feel the necessity of pre-supposing place in supposing existence. Axioms are excluded from manufactured articles out of nothing, and from being created truths. They are nature's, not God's declarations; are the facts, express

some of the uncreated relations of the universe, are involved in the certitude of its eternal mechanics, its intelligibility. We are products of nature. And in becoming intelligent, become conscious of her facts and methods. The notion of God is not implied in the notion of material or mental existence. It has grown out of common experience in a natural way. We have before remarked the universal tendency of men to seek a cause for whatever their experience brings to their notice. In primitive ages the causes of events were all unknown. But men soon observed that their spontaneous activities changed some things, and these more and more as their experience enlarged, until they came to think that all things were produced by agencies similar to themselves, but by Gods. Hence the Hebrew God made man in his own image, and likeness. And the idea of *making* still clings to the race. A man said to me the other day, "I should know there was a God by looking into the heavens," as if he saw there created or made things, by intelligent and purposive agency. But the great phenomena of nature such as sunrisings, thunder and lightnings, eclipses, require greater power than man is equal to. Hence the suggestion of beings greater than human, but with similar methods. Henceforth causes became Gods. It was not a primitive thought that anything was eternal and uncaused, not even the Gods. All things were made. The meaning of the word God or its equivalent in any other word, has been developed first from man's physical nature and wants, then from his intellectual. And has been all the time changing from the definite, visible, tangible, audible and humaniform, and plural, to the solitary, invisible, intangible, inaudible, and to the too indefinite for exact expression; and has escaped the capacity of exact thought; and has reached the extremest generality, diffusiveness and inconceivableness of the Omnipresent, Omniscient and Omnipotent. The orthodox would retain the personality. This harks back and

fellowships God walking in the garden in the cool of the day, and Zeus living like a Grecian Prince in the midst of his family on Olympus.

Discussion 54. Mind or consciousness is of the physical processes, taking place in the organism in accordance with the structure and the stimulants addressed to it. And it is eminently natural that all men being thus alike, should agree in the certitude of fundamental notions that find their counterpart in universal nature which has constructed human beings with capacity is to become intelligent in the things of nature in the working of the common mechanics of the organism. Hence nature is intelligible as we have before remarked, but not everywhere intelligent. These self-evident facts are involved in universal nature, and therefore cannot belie themselves when they rise into consciousness.

But does matter think, is it conscious and does it move of itself? Matter is self-movent, or it acts and reacts upon itself to the result of universal motion as mode of existing, instead of universal and absolute quiescence. And it must exist either in motion or not in motion. It is found to be everywhere in motion, where intelligence has reached. And changing phenomena and force are inconceivable without motion. Its direction and velocity are determined by its local mass and internal state and related masses, larger or smaller, near or remote, with determining factors. We have no ground to hold nor need we aver that matter *per se* feels, or is in a state of bare awareness as a universal attribute as is motion, from which as an eternal germ, all consciousness and intelligence evolves, and consequently all matter is living. Matter as matter gives no evidence of being alive, nor is anything known that necessitates or even renders plausible the inference that all matter is alive. Properties and function that are local, changing and evanescent as are life, consciosness and intelligence result as much and for equal reasons from structural posi-

tions and motions of matter and a favoring environment, as do the phenomena of electricity, meteorology, physics, chemistry and astronomy. Indeed, we have no other source of origin for psychics than physics, taking the last word in its largest meaning, or matter in certain interrelated positions and motions. How unlike are results to their causes, or causal antecedents. Note the unlike and often trivial causes, mere words perhaps, of some long and destructive wars. We cannot agree with Descartes that there is always as much real existence in the cause as in the effect. But one thing is seldom if ever the complete cause of an effect. There must be at least concurring circumstances. We say that some local material structures chemically arranged and interiorly worked by physical and physiological forces all natural, are the *apparent* seats and sources of consciousness, intelligence and voluntary action, beyond proof to the contrary. And that life and psychic properties and functions do as *apparently* result from definitely material structures aforesaid, which are human organisms, as do the simple chemical and electrical properties and functions result from other specific but much less complex material structures appropriate to their results, with no more reason to postulate the supernatural or a hidden immaterial entity in the one class of phenomena than in the other, either as proximate and direct, or remote and indirect causes. We say *apparent*, for intelligence is not at present more able to trace causes into necessary effect, or antecedents into necessary consequent, as to chemical or electrical products from their uniform precedents, than sensation and intellectual or emotional consciousness from its uniform precedents, none of which precedents contains a trace of the specific properties of their consequence; showing that the difference in antecedents from consequents in both classes of cases lies in the difference of the mechanical arrangement of matter, as the mathematician is able to trace or rather foresee, the steps of the

solution of a mathematical problem to its final and necessary resolution. And there is an intellectual provision not of the *how,* but that all caused consequents in the physical and psychical departments of nature are as fully necessitated by their material causal antecedents, as the statement of a mathematical problem contains the necessitated way of its solution. How can or why should two invisible gases, with fixed and definite properties as gases, uniting chemically, which can be conceived only as a determinate mechanical arrangement of the atoms or molecules, or corpuscles, of the matter of one with those of the other gas, result in *water,* losing the form and all their properties as gases, except weight, which expresses the unchanged quantity of material substance, and this is never changed by any changed form, property or function, in passing from the inorganic to the organic and living world, and back again to the inorganic world, demonstrating that all changing phenomena are but shifting mechanical forms and their consequent properties and functions; and as *water,* takes on new form, properties and functions, in the living, economic and inorganic worlds. No explanatory answer can be given to these questions. They do so unite and so change. The facts are made out, but not the how or why. And whoever says, it is God's will, God does it, offers no explanation, nor has he said anything that he knows, or can intelligibly conceive. It is the talk of a child to children. Or how a microscopic bit of organized and vitalized matter, taking form, but not the human, and endowments that are human, and to be realized years hence in posterity, in the ovaries of the mother, and other still smaller bit of organized matter, that is to say, differently arranged but the same kind of atoms of matter, taking form in the testes of the father, dowered with tendency to male-sex or female-sex the offspring, and also to transmit to future individuals traits that have characterized past generations and to be entailed upon future generations,

through the next intervening lad or lass, as philosopher or imbecile, criminal or moralist, symmetrical or deformed in body. And these microscopic bits of matter so potentially endowed are cells of wonderful complexity of structure, and may compass the sum total of the heritage of the species. And the whole body, save its liquids, and all living bodies from and after conception, which is the beginnnig of the individual being, are specially grouped systems of cells; and they carry on all the processes of the body, which conspire to functionate personal sensation, intellectual and emotional consciousness and voluntary action. And life joined to the intelligible of nature, becomes individualized intelligence; which is nothing but the intelligible inevitably intrinsic in the determinate relationships necessarily secured by the conditioning validities, space and time, and become conscious through material form and function, as all other attributes arise.

Conception, the proximate beginning of our individual being, consists of a spermatozoan-cell, interpenetrating an ovum-cell, and the two cells becoming one cell. Thus mingling and so identifying in one process a personal unity, the two ancestral lines of typical traits of body and mind, and modifying both, with occasional wide departures from recent ancestry, to some great advance in mental specialty or sense defect, or bodily contour, either enlarged or dwarfed. And the process of formation and development of body is the division of this one cell into two equal cells; and each of these into two and so on, each one constantly enlarging. The shaping of cells into tissues and tissues into organs and their relative placing in the organism follows the same order in all normal human gestations. And all this without a directing or superintendence of an intelligence either imminent or transcendent that we know of or need to affirm. Life and intelligence being numerical, local and individualized, are responsive to nature's infinite fullness of

possible becomings, and cannot be supposed casual of nature. Or intelligence is the response to nature's intelligibleness. No higher reach of nature's summit is conceivable than her universal and necessary intelligibility becoming personal conscious intelligence, with some measure of corresponding power to effect changes of property by constructing material forms of positional relationship through motion, her own method without intelligence, by that which underlies and has produced intelligence, viz: the universal and necessary space and time orders of placing matter by the eternal mode of existing in motion that does the placing, from the simplest inorganic to the most complex organism; that is, form and structure building. So we may say, no material organic structure, no conscious intelligence. Structural forms possess, evolve and functionate properties, throughout the inorganic and organic worlds, by virtue of the forms expressing particulars of the cosmic fullness of all possible becomings. Nature builds unto intelligence, not *by* it. She has not constructed the form that carries in itself life and highest developed conscious personality by a single leap from the inorganic, but attained it by advancing steps. It is prophetic in the coming together of particles of matter, and may be placed in the universal gravitative attraction, the tendency of matter to associate with matter, and approaching through differentiating and specializing associations, as cohesive, capillary and magnetic attractions, and crystallization, advancing into the colloid state, and thence into the organic or protoplasmic, where life is intrinsic as property of material mechanics, as all mere chemical properties are intrinsic, actual and co-ordinate in the chemical structure and were not in the constituents of the structure. Properties are innate in structure, and inseparable from it. Life is property and function intrinsic in a particular physico-chemical structure, increasing in variety, intensity, strength and number of manifestations as struc-

ture becomes more and more complex, every part of which structure is continually undergoing physiogenic constructive and destructive metabolic changes or motions. This structure is a material entity, and these are changes in matter with no known or conceivable efficient non-material element, creating simple awareness of undistinguishable externality and internality, on to distinct sentience, separated senses, intellectual and ethical consciousness, intelligence, emotional sentiment, speech, reasoning, oratory, artistic arrangement, cosmic recognition and speculation. A writer in the Nineteenth Century says: Since life can find its necessary nobility in matter, can it not also acquire its necessary sentience from the same source. Sentiency is connate in material relationship and environment, where every property and function is found. And every one of these mental characters and executive acquirements implies as its proximate source or cause, some change in the positions and motions of the matter composing the material structure which is the seat of these phenomena. And any one of them may be the special topic of investigation and cultivation to more proficiency as an end, as the study of electricity or general physics may be pursued as an end. What is subjective must be investigated with the same subjective tools that investigate the objective. And it would not be otherwise, for consciousness, intelligence, is that alone which can investigate. And it shows that the subjective is but the objective become subjective or conscious. For life and all its enlargement is a condition or state or property which consciousness recognizes may or may not belong to the objective. And belonging to it, the objective becomes the subjective, not entitive but propertive.

Discussion 55. This property of life and its riches of intelligence and action are created by material processes within the organism, and are the function of these processes, and the function is a reverse stimulus upon

the processes. That is, the more intelligence and muscular action are exercised upon their respective objects, within certain limits, and the more our sense perceptions are exercised upon a variety of objects, the more vigorous, effective and precise become the processes to eventuate their function, viz: intelligence and voluntary action. But the functioned life and intelligence of the organism may cease very suddenly on its reception of a very small bit of matter called poison, whose atomic or molecular structure and consequent properties, when introduced into the living organism, are incompatible with the processes of the organism. As a grain of sand introduced into the mechanics of a watch, is incompatible with its moving machinery, and its function, time-keeping has ceased. A few drops of Cyanohydric acid taken into the human system produces death in a few seconds. And this acid is obtained from distillation of kernels of bitter almonds and various fruits. And the most deadly poisons are nothing but chemical combinations of the same kinds of matter which in other combinations are constituents of our bodies and our foods. The poison of snakes and insects are only different chemical syntheses of the matter which had been their food. And the matter of our own bodies which had yielded our most exquisite and hallowed pleasure or been a part of our wife or child who is or has been the dearest object of our affection, becoming putrescent, that is, taking on different chemical interrelations, and received into the inmost working penetralia of our systems may destroy our lives. Professor Elmer Gates, of the Smithsonian Institute, Washington, D. C., has had persons in different mental states breathe into a tube, and from the condensation of the vapor of the breath upon the walls of the tube, obtained a chemical combination indicating by its color and reactions, the state of mind of the person at the time of the experiment. And he declares a mother nursing her infant while in a state of anger so poisoned

her milk that the child died of the poison. And emanations of matter from our bodies too minute to be appreciated by our senses supplemented by helps that increase many fold their power of discernment, in certain diseases, and received into other bodies, have the power of setting up in these bodies similar processes which were the diseases in us. And the physical environment of temperature, which is a mode of motion of the most intimate portions of matter increasing or decreasing velocity beyond certain extremes, either way, will at once destroy or stop the processes of life, because incompatible with constant changes of the orderly interstitial disintegration and reintegration which functionates life and intellection.

All this relates to matter and the products of its combinations and structural functions, and apparently to nothing else. Life and consciousness and all these words mean seem as truly and completely produced, created and brought into being by, and in, a local material organism and its material environment, from conception and segmentation of the impregnated ovum, on to old age, and to disappear and cease to be on dissolution of the organism as the properties of any chemical structure are created and brought into being, and cease to be on the dissolution of the chemical structure. "No one hesitates to attribute to deficient structure the inability of idiots to learn, and all admit that men of genius are born and not made." (*The Foundation of Zoology, Introduction*). It is matter in motions in certain definite interrelations in a given area, from corpuscle to nebula, from atom to star, from cell to complete organism, from the infinite in extent to the infinitesimal, that originate or create all properties and effect all functions, of every kind and degree. It is action and reaction grounded on the universal and eternal mode of existence, existing in motion, rather than not in motion, that generates all phenomena.

Prof. Gates says: "My experiments prove that the mind-activities create the structures which functionate the mind." He does not mean that the individual mind pre-exists and builds the structures which functionate the mind. For these structures are built as the muscles are, in the mother's womb. But that chemical structure precedes and initiates mentation, and by increasing mind-producing activities, these invite more blood to the structures with the consequence of augmenting the growth and power of the structures to produce more and more accurate mentation. As it is the exercise of the muscles of the blacksmith's arm that draws more blood to the muscles and increases their growth and efficient working. And the same is true of the mind-producing cell structure of the brain. Mind-building is brain-building. "The experimentalist" says Prof. Gates, "believes that the mind entity cannot exist apart from structure. The functioning of the individual organism is but one factor of mind. A most important factor is the fundamental connection of the individual organism with the cosmic environment. Mind may be more than this, but at least it is this. I make no distinction between mind and soul. I do not attempt any further definition of mind than that it is the totality of the sub-conscious and conscious adaptive functions of the organism in interaction with the Cosmos." "This brain-building process embodies a number of successive stages. The first stage consists in enregistering the sense impressions of all the senses, so as to produce sensation-structures. Cognizance of a sense impression is called sensation. The conscious state which we call perceiving a sense impression produces a chemical deposition of matter in the brain-cells, and each repitition of that sense-consciousness increases the amount of matter deposited, the result being a sense-memory structure. The functioning of that structure constitutes memory."

"When the sensation-structures have been formed in the brain, we may begin the second stage, which consists in causing the child to discriminate between the different sensations previously acquired and to associate them in consciousness, so as to produce what is called an integrant of the second order, or images, the units of which are sensations of the first stage of brain-building. And so on through thirty or forty successive stages."

"The first experiments in my investigations," says Prof. Gates, "regarding the mind consisted in giving certain animals an extraordinary and excessive training in one mental faculty,—e. g., seeing or hearing,—and in depriving other animals, identical in age and breed, of the opportunity of using that faculty. I then killed both classes of animals and examined their brains to see if any structural difference had been caused by the excessive mental activity, as compared with the deprivation or absence thereof. During five or six months for five or six hours each day, I trained dogs in discriminating colors. The result was that upon examining the occipital areas of their brain I found a far greater number of brain-cells than any animal of like breed ever possessed. The trained dogs were able to discriminate between seven shades of red and six or eight of green, besides manifesting in other ways more mental ability than any untrained dog. I have trained four generations of guinea-pigs in the use of the visual faculty, and the children of the fourth generation were born with a greater number of brain-cells in the seeing-areas than other guinea-pigs not so trained. The experiment has been successfully repeated several times, and it demonstrates the transmission of acquired characteristics. I raise several million infusoria in a tank, and then, by gradually increasing heat or cold, or concussion, I destroy all except two or three proved to be most capable of surviving. These survivors propagate several million more, and generation after generation the process is repeated. After about twenty-one months, new

structures arise, and I make a note of the concomitant mentations, or adaptive activities which also arise. As a method of psychological research, this is new. The experiments I have made contradict the conclusions of Weismann and others regarding heredity. They claim that we have no proof of a skill, an idiosyncracy, or a habit acquired during the lifetime of an individual, being transmitted to that person's offspring. My conclusion is that mental activity creates in mental organism certain structures transmissible to their offspring." From being much taught in all the positive material and mental sciences, backed and corrected by prolonged and severe laboratory experimentation and observational tests of selected cases, Prof. Gates has brought out and is laboring to extend and perfect a system of scientific mental culture and discipline, effective results and of philosophic import, which method and import are to my mind decidedly materialistic; although he declines to declare himself a materialist or spiritualist. I see no room or vocation for a spiritistic or immaterial entity, whatever that may be, to intervene between the material structure which mentates, and the reciprocal mentation which builds its own structure. I do not believe that any person has ever yet conceived an immaterial entity, and saw in the concept by virtue of its inherency, consciousness, intelligence, and voluntary action; or being created and endowed with these atttributes by another conceptional existence with inherent power to create and endow with these attributes. And the only ultimate ground for this verbal assumption is another groundless assumption, viz: that the material universe is incompetent to evolve in individuals various degrees of the knowledge of itself, as it seems to do.

We have no good reason to deny what is in manifest agreement with all appearance, and nothing in conflict with that appearance, on the arbitrary assumption that it is impossible; viz: that the sum total of individual consciousness and intelligence (and all consciousness and in-

telligence is individual) is effected by and in, the local complex of the material organism, in interaction with the cosmos environment from which all becomings proceed and of which they are. And this is the undesigned and unpurposed order of nature we may say; since all we know of design and purpose is manifested by individual material organisms functioning design and purpose. Is there design and purpose in the chemistry of oxygen and hydrogen in uniting, to produce water? Is there anything equaling the accuracy and certainty of means to ends in the processes of chemistry and physics, in the design and purpose of intelligence? How long a time has elapsed since the variation of the earth's rotation on its axis or translation round the sun, changing the length of the day or year sufficient for intelligence to mark it, or when has water been imperfectly formed? Nature seems competent in her infinite resources and processes, to bring forth consciousness out of unconsciousness, life from the not living, and design out of the undesigned. "We live in the hope and faith," says Huxley, "that by the advance of molecular physics we shall, by and by, be able to see our way as clearly from the constituents of water to the properties of water as we are now able to deduce the operations of a watch from the form of its parts and the way they are put together." "I certainly see no reason for doubting," (*The Foundations of Zoology*) "that all the properties of organisms may possibly be some day deduced from the nature and disposition of their constituent molecules. If I should live to see this proved, I should believe it without remodeling any belief I now hold; for most assuredly I do not believe that these activities are the result of anything else than physical structure." Huxley says: "If the properties of water may be properly said to result from the nature and disposition of its component molecules, I can find no intelligible ground for refusing to say that the properties

of protoplasm result from the nature and disposition of its molecules."

It is a fair inference from this conclusion, that whoever has reached it holds it as likely that life truly and fully results from the nature and certain interrelations of matter forming protoplasm—"the physical basis" of all orders and degrees of life, as matter in some other certain interrelations forms water with all its properties. All response in the physical, chemical, electrical and magnetical worlds, indeed we may say in the whole of inanimate nature, is mechanical to mechanics. Note universal gravitation,—directly as the mass of matter, and indirectly as the square of the distance the masses are apart from each other. And we may go further, for there is no proof to the contrary, and all analogy favors it, that the animate and conscious is a response to the inanimate and unconscious world. A recent magazine writer, after quoting Butschli, Englemann, Jagadis, Chundra, Rose, Loeb, Sir William Ramsay and other workers in the chemico-animate, and parthenogenetic fields of endeavor, says: "The mechanical theory of life has abundantly justified itself by an appeal to the facts of nature. For orthodox science of to-day, life is solely a matter of mechanics." The conception of the living being and the forming of the organism in the womb or egg, that is, to functionate independent life and consciousness, and voluntary action, is chemico-mechanical. Life originates to all appearance, in the very complex chemistry of protoplasm. All life known to man is an inherent property, or an indwelling *awareness*, truly originated in and by this chemical combination, and from no other source. It would be absurd to say that intelligence preceded and constructed this particular protoplasmic chemical, and no other, that it might functionate the very intelligence that constructed it.

The atomic constituents of protoplasm are known, but not how they are related to each other in their union.

And if it were, we should not probably be able to see from this chemical relationship, which can only be conceived as mechanical, how *awareness* and intelligence could be born of such parentage. But no more can we see *how* the form water and all its properties and uses can result from the chemistry of its two constituent gases. Or, on looking at a piece of charcoal, or a stream of soot issuing from your smoking lamp, are able to see how or why, the same element carbon, taking on the form of crystallization from stress of its internal nature by external conditions somewhere in nature's universal laboratory, should be so changed in form, properties and value, as to become diamond. This mystery is as yet, as fully hidden from intelligence in the property-producing departments of nature's activities,—the mystery of crystallization and much of physics, as the more complex substance protoplasm which has the connate or co-ordinate property of awareness and intelligence. But the latter property, intelligence, is no less apparently the property solely of material constituents mechanically arranged than is water or diamond. The great difference and amazing superiority of protoplasm over the simpler degree of a chemical complex is that none of these yield awareness, nor do they have any reverse action to increase their growth and perfect and develop their properties, as protoplasm has. That is, they have not the property of life. Or, life is not coordinate with any other material structure than that of the chemistry of protoplasm. We have no more reason to assert that intelligence is a factor in manipulating the chemical arrangement of the infinitesimal particles of matter into protoplasm, as nature evidently does without intelligence and therefore without design of purposed result, than in any other chemical product. And it is as much the nature of protoplasm to be alive from its mere chemistry, as for another definite chemistry of matter to be water, another to be alkaline, or acid; or a certain relationship of zinc

and copper to yield galvanic electricity; or for two masses of matter to attract each other simply because they are two masses of matter; or water free from external hinderance to move, will go to the lowest place. We have all the reason for the assertion that life naturally results from the chemistry of the constituents of protoplasm, that we have to assert that water naturally results from the chemistry of the constituents of water, which are no more aqueous than those of protoplasm are vital. For the two elements that in one special form of their union constitute water and express its properties, are the very two of the four which in another special form chiefly or wholly constitute protoplasm and express life and subjectivity.

Discussion 56. The methods of creating and communicating life and intelligence are the same as for creating and communicating chemical properties, but more complex, by unintelligent but everywhere intelligible nature which is mechanical and is imitated by intelligent beings, viz: by the orderly interrelations of material existence, that is not itself intelligent or feeling. The alphabets of languages, of which there are a thousand or more, invented by mankind, are all arbitrary marks or characters having no intrinsic meaning except that which has been agreed upon that the letters and their union into words and sentences should stand for, are all mechanical expressions of our thoughts and feelings. There is no one system of such signs or symbols common to the race. But each language is common to a larger or smaller group of human beings expressive of their thoughts and feelings, and the records of their doings, not understood by other groups unless specially learned by them. Think how varied are the mechanical forms devised by man to express his feelings and communicate them to his fellows; the manual for deaf and dumb mutes, muscular gesticulation, facial expression, different human and animal emotional voice expressions, national flag-expres-

sions, signs expressing army and navy, ecclesiastical and civil distinctions, musical notations; and the figures, letters and other characters used to express mathematical relations, and the technical placing in certain relations these signs and changing their positional relation after a definite order thought out, that should carry these signs to certain relations with one another, and the mathematical statement of the problem has resulted in its solution. All is mechanical in execution. But intelligence has chosen the characters and endowed them with meaning and conducted the process. That is, intelligence has conferred intelligibility upon the characters and the process, since these stand in definitely ordered relations, and orderly relations constitute intelligibility, no matter how the relations came about. And all nature's differences and changes are and must be orderly, for all existence whether fixed in position or changing by motions, must be in the orders of space and time. If they *must* be in these orders, they cannot be otherwise, even by the agency of intelligence and voluntary action, for no action or conception can be in conflict therewith. Then it is useless and absurd to postulate intelligence as cause of being in these orders. And surely we cannot suppose intelligence to be cause of space and time, or that these universal and necessary validities had cause, for what is and is without beginning, is eternal and without cause. For we must affirm that space and time are abstract orders without beginning, and they condition all intelligence whatever; since if it is, it must be somewhere and at some time. And we have seen that only one local specific interrelation of certain differences of one material existence in the midst of a definitely constituted material medium, that generates, or there is connate in, and by virtue of the relations and conditions just named, is awareness and intelligence. And any interrelations of difference remaining fixed or changing orderly along the same or similar lines of process, is intelligible, whether the

relation and change be the eternal order without antecedent or cause other than the unbegun and everlasting nature of eternal existence, or be local and temporary and be conducted by intelligent purpose. Therefore there is no ground for the inference that nature's universal intelligibility has been ordered by intelligence. Did intelligence cause that parallel lines can never approach nearer, or recede farther from, each other, without ceasing to be parallel, and the like of all axiomatic truths, and so concretely applicable beyond the power of intelligent agency to invalidate, and therefore to validate? Or has advanced intelligence merely discovered these truths to be involved in its nature, and so in objective existence. For we hold that the subject or self is not an independent entitive existence, but simply natural awareness. And this means that inanimate material existence has locally become organized, animate, conscious and intelligent, as complement or counterpart of nature's intelligibility, through growing complexity of material interrelations, which is seen to be the source of all emerging or co-ordinate properties whether still inanimate as mere chemical, or animate and intelligent. For we know of no other means than the mechanics of body—the organisms by which nature creates and expresses consciousness of herself. And the exercise of which by the human animal at least, upon different objects of nature, is to intellectualize. And the more exercise the more nature responds in adaptive mechanics to understand her mysterious intelligibility. Conscious intelligence and corresponding practical use, is the summit of conceivable advance in dignity and endeavor of the possible properties of existence. For we may say, since nothing else is verifiable as constant and universal antecedent, that mechanics as truly creates and communicates intelligence from the intelligible of nature, as it creates and communicates the simpler inanimate chemical properties. But this idea, if announced, would

be very unpopular at the present time, while cognitive and discriminating powers seem self-advancing, intensifying and perfecting beyond assignable limits, from a reflex stimulus upon the mechanics which are their origin, and to entail this advantage upon posterity. And the intelligibility of the universe is as infinite, and its counterpart intelligence, is as much natural and of nature, as intelligibility and can never be proscribed. Therefore, the expression: "The unknowable should have no tolerance in speech or writings."

So far as traceable, awareness originates in the chemistry of protoplasm. It is no more traceable into the elements of protoplasm, the atoms or corpuscles, than is water traceable into hydrogen or oxygen as such, but only into their specific union called chemical. The lowest degree of life that our advanced percipiency is capable of recognizing, manifests awareness which we take to be the beginning of what becoming extended, intensified and differentiated life, through a corresponding growing complexity of material organism, is consciousness, discernment, understanding, the feeling of self and of not self. And awareness appears synchronous with the chemical combination called protoplasm, or sarcode. "An albuminoid substance consisting of carbon, oxygen, hydrogen and nitrogen, in extremely complex and unstable molecular combination, is capable under proper conditions of manifesting certain vital phenomena, as spontaneous motion, sensation, assimilation, and reproduction, these constituting the physical basis of life of all plants and animals. It is essential to the nature of protoplasm that this substance consist chemically of the four elements named, with or without traces of some other elements. The physiological activities of protoplasm are manifested in its irritability or ready response to external stimuli, as well as its inherent capacity of spontaneous movement. Protoplasm builds up every vegetable and animal fabric, yet is itself

devoid of discernable histological structure. An individuated mass of protoplasm, generally of microscopic size, constitutes a cell, which may be the whole of an organism or the structural unit of any plant or animal. The ovum of any creature consists of protoplasm. The life of the organism as a whole consists of the continuous waste and repair of the protoplasmic material of its cells. The manufacture of protoplasm is a function of the vegetable kingdom. Plants make it directly from the mineral compounds and from the atmosphere under the influence of the sun's light and heat.''

The last statement leaves us with the implication of life already, and ventures no attempt to account for the origin of life. But there are physical indications that convince our reason that life must have had beginning on our earth. We need not stop to consider the proposition that some living organism in a meteor dropped from some other orb, for which there is no evidence, and against which there is much evidence; or that life was created by some God, which is the prevailing religious assumption, but which of course, has no scientific aspect. Nor can we adopt the aphorism,—''Life only from Life.'' It is a formula of ignorance, and not of knowledge. It is wanting in scientific and philosophic consistency. For we have good and sufficient reason for holding that there has been wherever we can affirm protoplasm is, material conditions compatible with known chemical unions, and especially those of protoplasm. Besides, it implies the absurdity that life can either begin without cause for beginning, or it is its own cause for beginning; and violates the evident maxim that whatever is and can and does cease to be, must have begun to be. It would be harmonious with the assumption that matter is eternally and universally alive, for which universally alive there is no evidence.

Cataneo, an Italian author of a work on Embryology (1895) as quoted by Charles Godfrey Leland, in a

little book entitled *The Alternate Sex,* says: "However the question of spontaneous generation, if not as yet solved in the field of experiment, constitutes a problem which is anything but absurd in that of philosophy. One of the two must be true, either life has always existed on our globe, or began to exist. The first hypothesis cannot be sustained, because the ancient conditions of the earth, owing to excess of elevated temperatures (extremes of heat and cold) could not have been adapted to the production and preservation of organic combinations." As to the origin of life there are several hypotheses. Ludwig Buchner, M. D., in *Force and Matter,* advocates the notion that germs or beginning of all living things existed from all eternity either in the formless vapor from which the earth was gradually condensed, or else in space, from which they descended on the crust of the earth after it had formed and cooled down, and became capable of development wherever conditions were favorable. This, he says, is more intrinsically probable than the hypothesis of creation for which there is no scientific foundation whatever. Since he proposed this theory (1855) he says the cosmical origin of life has become recognized among the hypotheses on the beginning of life. As to "the beginning of life" it may be objected that, after one has declared his belief that the germs of all living things existed from all eternity, to speak of the *beginning* of life, is to contradict one's self. What is declared to be eternal is to deny its beginning. He goes on to say that great numbers of microscopic organisms have been found in the higher regions of the terrestrial atmosphere, and Angus Smith has shown that air, however pure, always contains a quantity of organized matter. And that Ehrenberg gave his deliberate opinion that organized beings exist in space, from whence they occasionally come down on our globe. He cites Quinet (1871) as holding that life is of cosmical origin, and as old and widely spread as matter itself. The earth, he thinks, attracted and still attracts

the germs of future life to itself from the cosmic mass. Neibauer (1872) has collected facts to show that organized germs (of cosmical origin) are carried to us on the earth by the air spread throughout the solar system. The famous traveller *Moritz Wagner* considers that life is as old as matter, or is imported into it from universal space. The atmospheres of celestial bodies, says *Wagner*, like those of the revolving cosmic vapor masses, must be regarded as permanent conservatories and eternal greenhouses of organized germs. *Prof. Semper* (1876) favors the hypothesis that life on our globe is derived from organic germs belonging to other worlds, which have fallen upon it. And Sir W. Thompson, now Lord Kelvin, and the German physiologist Helmholtz, have declared in favor of this hypothesis. There is but one thing that militates against it, says Buchner, and that is the etxraordinary low temperature (238 to 256° F.) of the cosmic space. This difficulty is overcome, if the meteoric stones and meteorites which fall upon the earth actually bring with them cosmical life that exists beyond our earth. Chemists have demonstrated the presence of organized substances in a carbonized condition, in a great many meteorites. And Dr. Otto Hahn lately made out that he had discovered actual traces of plant and animal remains in meteoric stones. And Dr. Weinland, Prof. Karsten and others have pronounced his discovery to be accurate. And Buchner remarks that spontaneous generation of life is an indispensable hypothesis beside the fundamental facts of astronomy and geology. It would imply a perfectly inadmissible interruption of, and break through the universal causal relationship that obtains throughout correlated nature, if we admitted that there was a single moment in the history of the formation of the earth and the celestial bodies in which that unity was interrupted or destroyed by a supernatural intervention or creative act. The general primordial conditions of our planet must have been very different from those of the

present time, and probably more favorable for the origin of life. We need but think of the atmosphere replete with carbon for the living structures that have originated our coal-mines, chalk and lime-rock, and coral beds, all evidencing life work; the difference in the density, electrical and heat conditions of the air, and chemical state of the ocean and many other facts.

Discussion 57. There can be but one true, intelligible and self-consistent philosophy of the universe. And this must ground on the postulate of the eternal self-existence of the material quantitative substance. And from its intrinsic, underived power to change in form and functional products, all mutations arise. No intelligible philosophy can found on the postulate of a created universe; and the interference of miracle in the order of becomings. Science must ascertain how, why and by what means local objects and subjects and events become and cease. And philosophy must see beyond the individual becomings, and find an intelligible, not an intelligent, principle that unifies them all, as efficient cause and effect. A fiat creation and miraculous intervention must ever remain unintelligible, and therefore unscientific and unphilosophical. What a huge and monstrous fiction, and how widely spread and advocated by intelligent men, is the creation, or the calling into existence from non-existence, the material universe. I am of the opinion that it is never entertained from free intellectual conviction, but from emotional and from socially instructed discipline, and from social intolerance of public denial.

There is no supernatural or superuniversal, and no real metaphysical that does not revert to the physical and mechanical for cause. There is no out of, or beyond the natural for its cause, or explanation of any change within it. It holds within and of itself all intelligence and explanation of itself. If there is out of space and before time, there is out of the universe, but not otherwise. All being and existence constitutes the universe. There is

that which has always been, and therefore must forever continue to be, without change of any kind or in any degree, and which conditions and is law and order of all that exists and all change and becomings, and therefore must be distinguished from positive existence and alteration. These conditions, laws of static and dynamic and psychic order, the presuppositions in supposing or affirming any persistent or changing existence, the abstract verities and validities of universal and necessary application, from corpuscle to nebula, from living moneron to Deity, from the awareness of a single cell to the associated millions of the human brain,—are space and time. On these the mental and corresponding physical certainties of the mathematics, axiomatic truths, and all subjective and objective relations, repose, in their fundamental truth and stability. So these validities are equally applicable to all objectivity and subjectivity. Or rather I will say, being universal and of necessity objective validities, they must be valid for every subject and subjective state. For the intelligent subject is derived from intelligible objectivity, and is neither more nor less than local objectivity become conscious, and to some degree a volitional activity. And this embodied conscious, volitional activity is the self, a functional product of chemically organized matter. And what is universally true in the objective cosmos, and all experience not only verifies but is itself verified by its constancy and invariableness, and no experience antagonizes,—I mean self-evident or what are called *a priori* truths grounded in space and time, must have their source and place in, and as part of the objective universe, and hence of necessity must be in subjective consciousness.

No propositions seem to me more absurd than some of the Kantian metaphysical dogmas: "that space does not represent the relation of objects among themselves, nor any determination which is inherent in objects themselves, and would remain though all subjectivity were re-

moved. Space is nothing if we leave out of consideration the condition of a possible experience. Time is not a determinate order inherent in things themselves, and antecedent to things as their condition. Time is nothing but a subjective condition under which all intuitions take place within us. Time is nothing but the form of internal sense; is simply a subjective condition, and apart from the subject, is nothing. The reality of external objects does not admit of strict proof. Hitherto it has been supposed that all our knowledge must conform to objects. But objects must conform to our mode of cognition." Here are some of the data of idealism, and they antagonize universal experience. If space is not a real objective relation of objects among themselves, then there are no real objects; then the mathematical determination of the distances of the planets from the sun and from each other, and the objective and mutual relations of sun, moon and earth have no objective validity; and if space does not determine what part or if the whole disk of the sun will be eclipsed, and what part and the limits of the earth's surface the shadow will cover; and if time is not a real objective relation separating yet definitely connecting successive occurrences, and if astronomers do not ascertain these facts objectively and accord to them objective validity, but do find them as ideas in their own minds and impose them upon the heavens and upon the senses of all mankind; and if time is nothing but a subjective condition, and does not in its own verity determine the duration of the eclipse and the shadow, according to the time-rate of motion of the bodies of matter involved in the eclipse, as objective facts and objectively ascertained; and if time is nothing but the form of internal sense, and simply a subjective condition, and apart from the subject, is nothing; then but for the astronomers and the star-gazers, who must first exist and generate all objectivity, there were no astronomy as there seems to be, independent of all minds to view and con-

template the heavens, and before there were minds to create and project outwardly all objectivity, to the self-deception of all sense-observers including the idealists themselves. Then these calculations and the phenomena they pre-announce have no real objective validity. But universal sense-experience declares they have objective validity in their own intrinsic right and authority, since they have predictive demonstration. And man has simply recognized, and in no sense given law to their appearance, the facts and the method of ascertaining their order and time of occurrence. And the facts and the method are both and equally objective discoveries, the one through the intuitive capacity of the senses, the other by mental contemplation of the objects, their space and time relations. And the recognition and the contemplation, and the calculation, are the functions of organized living matter, localized and individualized and called man. And the subjective is only the perceiving and the calculating; that is, the intelligibility of the physics of the heavens, has become a unitary and capital intelligence.

If no space and no time but subjective, then no sun, moon nor stars, but subjective, nor possible experience, nor even subject. For if the perceiving and feeling subject is, the presupposition immediately and of necessity is suggested that, if it is, or the subject asserts itself as being, somewhere and sometime must be already, as a condition of the being of the subject. The objective must antedate and embrace the subjective. If space and time have no objective verity in their own being, they can have no subjective verity. These abstract conditions of all existence and universal and necessary validities, are absolute and independent being, and without the possibility of supposing any conditions *on* which they have their being. I have not denominated these abstractions existences, but have said they are validities and verities and conditions on which all existence whatever depends,

being is a more comprehensive allegation than positive existence and embraces it, whether subjective or objective. And contrary to the assertion of Kant, space and time which can never be identified with either subjective or objective existence, are of necessity involved in both, since no existence real or supposed, or even the supposition without these conditions as facts of being are *presupposed.* If objects and thoughts are, they must be embraced under these conditions. And these conditions are in no way affected by positive existence and phenomena. But they affect positive existence and phenomena. Positive existence, static, moving, conscious or inanimate, is affected by these abstract and universal verities and validities. Think of everywhere operating gravitation, and the order of the heavens and the earth as the consequence. These objects and this order are subject to the laws inherent in space and time. And these conditioning laws are utterly indifferent to positive existence or conscious intelligence, and whether known or not. And our cognition of these objective verities must conform to their order of being, and cannot prescribe their order or being, or the way that we shall know them.

"Time is nothing but a subjective condition, and apart from a subject is nothing." This means that the conscious subject gives being or verity to time, and were there no thinking subject, time would not be. Time has only thought-being, nor has space or material existence any other. "Objects of sense exist only in the mind," says Berkeley. And this is the distinguishing allegation of idealism. "As to what is said of the absolute existence of unthinking things without any relation to their being perceived, that seems perfectly unintelligible. Their *esse* is *percipi,* nor is it possible they should have any existence out of minds of thinking things which perceive them." *The Principles of Human Knowledge* by George Berkeley. But there are many things said in this little book that seem incompatible with the quotation, as it is

impossible that any intelligent man with normal senses and reflection, who says or writes anything, whose common-sense should not betray his adverse theory. The universal sense of mankind declares, in their practice that an external world exists, and which does not depend on any perception of it, and would remain though all conscious observing existences should be removed or had never existed.

According to the geological periods or eras of the earth's developing stratas, the era of mind capable of observing and contemplating either the objective not-self, or the subjective self, is relatively very recent. And the world recedes to the azoic period in which there are no evidences of any living things whose forms are preserved in the stratified rocks. Therefore we are carried back to a period at which we cannot say there was life on the earth. And to this the earth's present interior condition bears evidence, that there was a time when no life could have existed on our globe. Liquid water is a constituent in all living things. And the earth so heated that water could exist only in a state of vapor, and still more remotely when matter was so dispersed by heat that chemical affinity could not effect union of oxygen and hydrogen to form and give properties to water, and perhaps the atomic elements could not take form from the corpuscles, these probable states are utterly incompatible with any life. And if "objects of sense exist only in the mind," there being no mind, there could be no geology, no earth until there was mind-sense, in which they could exist. It is difficult to deal by way of argument as by way of sense-evidence with persons who have religiously, i. e., emotionally, the God-idea as the most pronounced of all their convictions. For neither sense nor reason can oust this supreme and all sufficient idea which presents itself as a solace and a reason why, in every emergency. There are the most scientific and philosophic reasons why this or that religious dogma cannot be true, as we cannot

mouth, eat and drink, chew and swallow the very flesh and blood of Jesus Christ, in eating and drinking the consecrated bread and wine. For the consecrating prayer does not directly or indirectly transsubstantiate these articles into the real flesh and blood of a person who has been dead for 1900 years, while the physical properties of the bread and wine, as tested by our senses, the only evidence by which we called them bread and wine before the consecrating prayer, remain the same after as before; or that prayer to a conception—a mental image, or to an affirmation not mentally imaged, called a God, or the God, cannot give us the things we pray for; for instance, large and cheap crops to the consumer, and at the same time and place, large and dear crops to the producer; or recovery from fatal shots. (President Garfield). The unanswerable reply would be: "But God can do all things." In time of general drought, the public assemble and pray for rain, and if it soon rains, how can the vulgar religious "God has done it," be set aside? Only by general intelligence in the uniformity, sufficiency and necessity of natural cause and effect in all phenomena, rendering special providences incompatible therewith.

Discussion 58. George Berkeley was Bishop of Cloyne and a stanch defender of the doctrines of the Christian Church. And he presented his idealism as a scheme of religious dogma, as an ever and everywhere active immaterialism, spiritualism and incorporealism, as a silencing argument against Atheism; a supernaturalism if there be a nature and a naturalism. And if not, then the whole world of experience and experiment, and of scientific education, is a drift in delusion. For these methods of obtaining and verifying knowledge neither lead to, nor ground in, incorporeal idealism, but in corporeal and natural realism. His system is an absolute monistic supernaturalism. He idealizes all sensation and denies an objective substantive existence in itself subsisting independent of any mind perceiving or con-

ceiving it. Soul or spirit is the only substance. Horace Bushnell in his Nature and Supernatural, defines the supernatural (the word) as meaning that which is not in the chain of natural cause and effect, or which acts upon the chain of cause and effect from without the chain. But this does not prove there is such an existence or such an operation. And delusion is defined as a false mental conception occasioned by an external object acting upon the senses but not capable of correction or removal by examination or reasoning. And illusion, as that which deceives, an unreal presentation to the bodily or mental eye. That a supernatural causation or prevention is in conflict with scientific verifiable knowledge, with necessary inferential assumption, self-evident and axiomatic, and universal sensible truths, and with all business relations, needs no further showing than its allegation. To Berkeley the only things existing are spirits and ideas. And yet to him objects are as real as they seem to be to the senses. I shall quote from his "The Principles of Human Knowledge," and from "The Three Dialogues Between Hylas and Philonous" as published by The Open Court Publishing Company, without further particularizing.

While no man ever asserted the existence of matter, real sense-perceived and sense-determined matter with stronger emphasis, no one ever denied the actual objective existence of matter more absolutely than Berkeley. "Assert the evidence of sense as high as you please, we are willing to do the same. That what I see, hear and feel doth exist, that is to say, is perceived by me, I no more doubt that I do my own being. I do not argue against the existence of any one thing that I can apprehend either by sense or reflexion. That the things I see with my eyes and touch with my hands do exist, really exist, I make not the least question. The only thing whose existence we deny is that which *philosophers* call Matter or corporeal substance. And in doing this there is no

damage done to the rest of mankind, who, I dare say, will never miss it. The Atheist will want the color of an empty name to support his impiety; and the philosophers may possibly find they have lost a great handle for trifling or disputation. If by matter you understand *that* which is seen, felt, tasted and touched, then I say matter eixsts, I am as firm a believer in its existence as any one can be, and herein I agree with the vulgar. If, on the contrary, you understand by matter that occult *substratum* which is not seen, not felt, not tasted and not touched,—that of which the senses do not, cannot, inform you—then I say I believe not in the existence of matter, and herein differ with the *philosophers*. I can as well doubt of my own being as of the being of those things which I actually perceive by sense, it being a manifest contradiction that any sensible object should be immediately perceived by sight or touch, and at the same time have no existence in nature, since the very existence of an unthinking being consists in being perceived. It is not a sufficient evidence to me of the existence of this *glove*, that I see it and feel it and wear it. Do I not know this to be a real stone that I stand on, and that which I see before my eyes to be a real tree? That a thing should be really perceived by my senses, and at the same time not really exist, is to me a plain contradiction. Wood, stones, fire, water, flesh, iron and the like things, which I name and discourse of are things that I know. But I do not see how the testimony of sense can be alleged as a proof of anything which is not perceived by sense." Like citations of affirmative allegations of the actual existence of matter in the vulgar sense might be greatly extended, but these will show how unequivocally if made by a writer of today after the radical distinction of subjective and objective has been developed and accepted as a real difference of thought and thing, of self and not self, they commit a writer to objective materialism. Eucken in his "Fundamental Concepts of Modern Philosophic

Thought'' says that the antithesis of subjective and objective in their history of development has interchanged meanings. I find he remarks the first examples of the new meaning in 1730; so we can say that they first enter upon their present usage with Kant, 1724-1804, Berkeley, 1684 or 1685-1753. Berkeley's Treatise Concerning the Principles of Human Knowledge was first published in Dublin in 1710. So the contrasted distinction between subjective and objective in their present psychological and philosophical use may not have been clear and distinct in the mind of Berkeley when he thought out his recorded utterances in the two publications mentioned above. For if a writer in the same book asserts unequivocally absolute idealism and absolute materialism, it would be held that he had flatly contradicted himself. And that Berkeley has emphatically affirmed the language of objective corporeal existence in the vulgar meaning of sense apprehension and sense determination, and as emphatically denied the objective existence of matter of itself subsisting independent of any mind perceiving it, is evident from the following quotations: ''It is an opinion strangely prevailing amongst men, that houses, mountains, rivers and all sensible objects have an existence, natural or real, distinct from their being perceived by the understanding. What are the fore-mentioned objects but the things we perceive by sense? and what do we perceive besides our own ideas or sensations? and is it not repugnant that any one of these, or any combination of them exist unperceived?'' It is more convenient as well as being more distinctly pertinent and definitely pointed, to comment upon these quotations as I copy them, than to make any comments continuous after closing the quotations.

I have already indicated that probably Berkeley did not realize in a psychological and philosophical discussion, the need of words that utterly distinguish between mind and matter, the ego from the non-ego, as now do

the words subject and object, and their adjective forms, subjective and objective, for these words hardly appear in the English translation of the two words cited. Hamilton remarks in the ninth lecture of his Metaphysics, "Subject denotes the mind itself, and subjective, that which belongs to, or proceeds from, the thinking subject. Object, on the other hand, is a term for that about which the knowing subject is conversant; while objective means that which belongs to, or proceeds from, the object known. The terms subjective and objective denote the primary distinctions in consciousness of self and not self, and this distinction involves the whole science of mind; for this science is nothing more than a determination of the subjective and objective in themselves, and their mutual relations. The distinction is of paramount importance, and of infinite application, not only in Philosophy, but in Grammar, Rhetoric, Criticism, Ethics, Politics, Jurisprudence and Theology. Subject and object mark out the fundamental and most thorough-going antithesis in philosophy. In this stage of your progress, gentlemen, it is not to make you aware of the paramount necessity of such a distinction, and of such terms,—or to show you how, from the want of such words expressive of this primary antithesis, the mental philosophy of this country (Scotland) has been checked in its development, and involved in the utmost perplexity and misconception. To this defect in the language of his psychological analysis, is, in a great measure, to be attributed the confusion, not to say the errors of Reid, in the very cardinal point of his philosophy, a confusion so great that the whole tendency of his doctrine was misconceived by Brown." If the importance of this primary and thorough-going distinction and words to express it, in psychological and philosophical discussion has not been overdrawn by Sir William Hamilton, and that it has not seems to be proven by the illustrative example given: that Thomas Reid, a noted Scottish philosopher and prin-

ciple founder of the Scottish School of Philosophy, and Professor of Philosophy at King's College, Aberdeen, and writer of a treatise on philosophy, so indeterminately expressed himself without adhering to the technical use of these terms, that Dr. Thomas Brown, 1778-1820, another Scottish philosopher almost as noted as Reid, utterly misconceived the real doctrine of Reid; how much more likely was there confusions in the mind and expression of Berkeley without the use, and probably the clear and distinct antithetical conception of subject and object, which would explain his self-contradiction in his use of words, and leave wholly inconclusive his system of idealism as he has presented it. That Berkeley had no notion of the importance and signification of the terms subject and object which they now assume in a definite and intelligible discussion of the physico-psychological universe, may be gathered from a single passage, in his Principles of Human Knowledge, viz: "As to what philosophers say of subject and mode; for instance, in this proposition, 'a die is hard, extended and square' and they will have it that the word *die* denotes a subject or substance." Here *subject* means object, as now used, in such matters as Berkeley was discussing. And as used by Berkeley tends to prove the statement of Eucken, that in the course of centuries they (subject and object) have simply interchanged meanings. True, these words have various meanings in law, grammar, logic, etc. But besides these they have come to have another precise technical meaning in metaphysics, which saves indefiniteness and circumlocution. How would the mathematician, scientist, artist or tradesman, acquire or communicate information concerning matters he was engaged in, without technical terms of expression? Development of intelligence can be obtained only through the clear and precise meaning of words, in the normal individual. "Since the objects of sense exist only in the mind," says Berkeley, "and without thought and are visibly inactive, there is nothing of

power or agency involved. I choose to mark them by the word *idea*. Nothing exists but spirit and idea. If by matter you understand that which is seen, felt, tasted and touched, then I say matter exists. I am as firm a believer in its existence as any one can be, and herein I agree with the vulgar. If on the contrary you understand by matter that occult *substratum* which is *not* seen, *not* felt, *not* tasted and *not* touched, that of which the senses do not and cannot inform you,—then I say, I believe not in the existence of matter, and herein I differ with the philosophers, and agree with the vulgar.'' A more precise, unequivocal and untechnical description of matter as believed in, and statement of what is not believed in, by the common people who take their normal senses as the best evidence of real objects and phenomena, and reject what is neither sensuous, nor physically, nor logically, nor of necessity inferable, nor inevitably a first postulate, could hardly be given by a pronounced materialist. But where is lodged this matter whose existence you accept with so much affirmative assertion of its real existence, good Bishop? In the mind or spirit, of course, for sensuous existence is wholly in its being perceived, for perceiving and objects perceived are in, and of, the substance of spirit, and where spirit is not there is nothing, and nothing can be perceived, and consequently exist. Then in parity of reasoning, both the act of perceiving and thing perceived, are spirit, and Hegel's position of identity of subject and object, emerges as consequent. But the vulgar do not believe that matter exists in the mind as place or *locus*, but that it is external to mind and would exist though unperceived and mind were not,—as real, objective, extended, figured and persistent as the universal history of intelligence affirms it to be. And materialistic philosophers and all pragmatic workers with matter and scientific investigators who can verify, and who believe in, natural cause and effect, without the intervention of mind and determining and directing factor, are classed

with the vulgar. But this class does not contain idealistic philosophers of any stripe. And idealistic philosophers of every stripe, in their daily, practical lives ignore their philosophy. For all living things show by their lives, which imply less or more awareness or intelligence, that the world is as real, objective and persistent, and independent of themselves, as senses declare it to be.

But ideas impressed on the senses, or sensations, are, nevertheless, real things, or do really exist. Says Berkeley: "Spirits are active, indivisible substances; ideas are inert, fleeting, dependent beings, which subsist not of themselves, but exist in minds or spiritual substances." And how do these real material existences, get into minds or spiritual substances, human and animal? "I conclude," says Berkeley, "that there is a Mind which affects me every moment with all the sensible impressions I perceive. The ideas imprinted on the senses by the Author of nature are called *real things;* and those excited in the imagination being less vivid and constant are more properly termed ideas, or images of things which they copy and represent. The visible ideas are the language whereby the Governing Spirit on whom we depend to inform us what tangible ideas he is about to imprint upon us, in case we excite this or that motion in our own bodies."

Idealism accepts much of what Berkeley contends for—the idealization of the material space and time universe, and holds all existence to be psychical; that matter has no such real objective, external, persistent existence, when not perceived, as sense and science and inference and human daily affairs ascribe to it. "It is the very essence of the Kantian idealism," says E. Caird, in his philosophy of Kant, "that objects are not there till they are thought."

Discussion 59. But religious idealism, as Descartes' and Berkeley's and an immaterial psychology, that is, mind and mentation, are something apart from and not a

part of, nor grounded in, or evolved out of, the material space and time universe, can afford no explicative philosophy of the universe. For its first principle is not the necessary assumption of positive existence and the inevitable implication of its conditions—space and time, in which its very necessity of assumption is self-involved, and can be nothing else than the universe of which the feeling of the necessity of its assumption is part. But instead the material substantive universe, all the existence and phenomena of which we know or can know anything, is gratuitously assumed to be produced *ideas,* in some way, not given, deceptively introduced into our minds by an existence, not assumed of physical or logical necessity, nor in any way capable of proof and declared to transcend both space and time, and to be imminent in universal positive existence and phenomena; or rather denies their real objective existence. But ideation or the formation or conception of ideas, as held by Berkeleyan idealism, is not the product of brain exercise under the stimulus of the real objects or the real truth of things presented, but the ideas, which have no counterpart of the real, are cast into consciousness by a foreign agency, an omnipotent spirit, of which no verifiable science treats or knows anything objectively as taught by Descartes, Leibnitz, Berkeley and Pearson, and many other teachers the world over. The universe covers the absolutely universal, the All, from which no absolute particular of thought or thing can be excluded and be shown to be so. These assumptions of a religious idealism submit to no demonstrative experimentation. Nor is it possible to construct experiments capable of dealing with the extra universal of space and time, or with the beyond of their universal contents. The very verbiage impresses the conviction as involving absurdity. We suppose the unsupposable and the unideal. The assumptions are not ideal, cannot be pictured, only verbal. How can one show that his ideas involve necessary creative existence lying be-

yond the domain of the laws of space and time, or that these verities were caused to be, or are mentally created, or that they have no validity as to material existence and phenomena except ideal, or that material existence and phenomena have no other reality than ideal, while intelligent life everywhere and always directly or indirectly proclaims the contrary? How can one, who accepts without question as real what his sense-intuitions declare and all physical science corroborates, and psychology necessarily implies, show that the creative existence he names exists, either transcendently or imminently, or both, if material existence as well as the verities of its conditions, are as real as they seem, or are simply ideas, and these latter are cast into the human organism for cognition? No such showing as demanded above appears to me possible, or sufficiently probable to reasonably create a declarative faith, when actual, real, quantitative existence is a first and necessary affirmation.

The remark made by Eucken that in the course of the centuries, subjective and objective have interchanged meanings, may be made concerning ideas. Plato's definition and construction of *idea*, the first historical development of the word, meant archetype, or models, or immaterial patterns, after which all material objects were fashioned. Plato regarded ideas as entitive reals, while we, as taught by positive verifiable science hold sense objects and the physical world as real, and ideas as mental images or pictures of the real. General notions or concepts were realities and causes of our sense perceptions with Plato, and with most idealists. Material objects that are presented to our senses and engage our daily lives in thought and effort in all kinds of business and pleasure, we regard as real existence, whereas the ideas of them which are the representations of their forms, properties, relations among themselves, and their functions, and are held latent in the memory as their retained likenesses, have no other existence than mental to be

brought forth and re-presented to consciousness by reminiscence, which are finally to vanish perhaps, beyond our power to recall. And this is now the case with the great mass of all our past experiences. And what but memory is to join our present lives with the past, and to identify ourselves with our past? Only a few of the mountain peaks of our past history that impressed us most vividly, or somewhat strangely, or have had continued conscious results, can now be discerned above the otherwise universal ocean of oblivion. And the peaks are sinking and will become submerged. As this is a gradual process, and new ideas possess us we are becoming other than we were, from oblivion to oblivion.

When we compare any number of men together or any other objects, we perceive or conceive, certain marks or characters that are similar. These are abstracted, classified and named, and become generalizations, but have no real existence apart from the individuals, only ideal. Scholastic realism of which Plato and the Platonists of his day may be called the Fathers, held that general notions or the likenesses of property, or quality or other marks, which characterize groups of individual objects, are real existences apart from the individuals, that there exists man, horse, virtue, justice, beauty, goodness, etc., which is not any concrete man or horse, and are entities apart from any real objects which manifest qualities. The individuals of every kind partake of the ideal entities appropriate to them, and are subsequent to them in point of time, and are formed after their likeness. Other philosophers held that this view of nature was not Realism, but Nominalism, a mere naming of general properties or qualities that are alike or similar in groups of individual objects, and has no existence apart from the individuals. This question was seriously and even violently debated in the middle ages, especially the twelfth century. But today where critical observation and exact science have guided thought and

determined facts, realism expresses the doctrine of sensuous and implied physics as real existence.

It was a fundamental principle with all the Greek philosophers, and indeed has been and is today, of all Aryan philosophy, and of Semitic theology and religion, to assume one eternal and underived existence, from which all else is derived. And it is inconceivable that any other assumption can possibly be primal and necessary. On this nucleus of absolute truth which cannot be denied without involving the absurdity of denying all real existence whatever, or the equal absurdity of averring that real existence can become without cause, or can be its own cause of becoming,—all science and philosophy must stand as ultimate, and must take their start in investigating and classifying the various groups of the intelligible, called the sciences, and philosophy must totalize and harmonize the sciences, under the domination of this primal and necessary postulate of eternal substance forever changing in space and time orders as mode of existing. All changes whatever must be in time order, though they should not seem to involve space-order. Positive existence developes or evolves the consciousness of itself in, and by means of, the mechanics of material organisms, nature's own construction. I make this assertion, because it harmonizes with universal observation, nor can any other course be shown, nor can a supernatural be shown or conceived, nor is it a necessary affirmation. Nature makes conscious her processes, their methods, their interrelations called cause and effect, antecedents and consequents, which are not at the same time both seed and fruit. Positive existence, local and general, changes its forms, but not its total quantity, and in these changes loses properties or what the older scientific writers called accidents, and takes on new forms and assumes new relations to other things. This is seen in infinite variety in chemistry, biology and geology. Positive existence evolves derivative phenomena of all

kinds from necessity of its nature, stimulated and ministered to by the environment. All things are within and of the resources of nature. There is neither supernatural nor transcendental to this all embracing variety in the one infinite universe. Inanimate nature works out her problems by the force and efficiency of her own necessary dynamic mechanical interrelations, and their native aptitude for all possible products, even to the extent of producing animate and intelligent beings, without a previous devised plan or final cause, or an intelligent architect either exterior to, or within, but not of, nature. These intelligent beings by the help of their intelligence and their voluntary self-motion which has the power of moving some other materials and to place them in certain relations to other materials, nature takes hold of them in her operations and the ends of intelligence may be met on a very limited scale, and nature imitated in what she does without intelligence; and not nature in her infinite range imitate one of her infinitesimal products. Eternal substantive existence being undevised and underived warrants such a statement, though far removed from the generally accepted cosmology. It is the *a priori* cosmogony. It denies creation, the theological conception, and affirms the eternity of the substantive universe and its existing in continual changes of forms and their consequential obliteration and generation of properties. And among these life and intelligence. This view gives no countenance to the statement of Anaxagoras who, believing in the eternity of matter, is reported to have said: "All things were mixed up together, then Mind came and arranged them all in distinct order." There is a general and strong feeling that the universe of materiality must have had a beginning, and nature's processes and products had a deviser, constructor, mover and director, out of the realm of nature, or at any rate, not of nature. "Nature hath some director of infinite knowledge to guide her in all her ways." (Hooker, Ecclesi-

astical Polity.) To seriously meditate and reason is to philosophize. Auguste Comte's announced discovery of The Law of the Three States seems to be the verbal formulation of nature's method of evolving the consciousness of itself, *viz*: the theological or fictitious state, the metaphysical or abstract and the positive or scientific state. To be a little egotistic and to give a concrete example as one I can personally vouch for, I may say that I have been an intense theologian, and imagined God was behind as originator, and either directly or indirectly the cause and operator of all existence and phenomena, and a metaphysician, but have outgrown these two stages in reaching the age of eighty-five years. And I see nearly all my acquaintance still in the theological or fictitious state as to the cosmological conception, and the acceptance of a providential care over a certain class of believers in which themselves are included, but their opposers excluded, kept so by the constant reiteration of the clergy and the general superstitious regard for the Bible inherited from the past and fostered by social and educational institutions. The law of the three states harmonizes with what we observe in the mental development of mankind. The great majority of the human race are still in the theological state. This is the childhood stage of intellectual development. All things are, and all phenomena transpire, according to the will of God. "Anything may happen. Nothing is impossible, nor is anything necessary. The will of God suffices for anything to happen or not to happen." What other view underlies our prayers? But careful observation and scientific tests show that nature vindicates its self-sufficiency for all its becomings without interference of Gods, many or one. But the strength and extent of the theological superstition has only in general been modified, in Christendom, by its superior scientific intelligence to all other parts of the world. And the modification consists mainly in discarding a multiplicity of Gods, and con-

centrating the sufficiency of the many upon one. The three stages of intellectual development are natural and universal according to Comte. He says: "According to the very nature of the human intellect every branch of our knowledge must necessarily pass successively in the course of its progressive development, through three different theoretical states; the theological or fictitious state, the metaphysical or abstract state, finally the scientific or positive state." "In other words the human mind by its nature in its researches makes use successively of three methods of philosophizing. Hence we find three kinds of philosophies, or general systems of conceiving the totality of phenomena which mutually exclude each other. The first is the necessary starting-point of human intelligence, the third its fixed and final state; the second is solely destined to serve as a transition." Comte calls 'theology' a general system of conceptions concerning the universality of phenomena which explains the appearance of these phenomena by the will of the Gods. Theological—that is to say, fictitious, supernatural, imaginary or mythological and arbitrary causation. Theology is synonymous with anthropomorphism in the conception of causes, as to the metaphysical mode of explaining phenomena, in physics for example, the hypothesis of an ether to explain optical and electrical and in physiology the hypothesis of a vital principle, and to explain psychological phenomena, a soul. Comte would hold these hypotheses as metaphysical. The metaphysical or abstract. Comte says, at bottom is no other than the fictitious. But natural phenomena, better observed, are referred no longer to capricious wills, but to invariable laws. The positive is the scientific or verifiable state, or by necessary implication and logical and physical reasoning upon what is given to the senses, sustained by critical and prolonged observation or experimentation. My authority for Comte's views is derived from L. Levy Bruhl's The Philosophy of Auguste Comte. The theolog-

ical and of consequence religious, is the primitive and unreflective attempt to interpret nature, or which is the same thing, to answer questions that spontaneously arise in a thinking subject, as to the cause of things observed by the senses. This is part of folk-lore, the earliest effort at comprehensive reasoning. Man, at first, had no other source from which to take his bearings, or to take his premises, and to draw his conclusions than his own conscious achievements. The changes which he observed were effected by beings like himself, greater and more powerful, but by similar methods. The suggestion of greater than himself, was furnished by comparison of what he could do and his child could not. He had no other pragmatic model to think after than himself and the animals around him. This was his reasoning, his philosophizing. And the resulting objects reached from his premises were, of necessity superhuman beings or Gods, but man-like. Man must at first, have conceived all activities, as to cause, to be upon the same plane as his own. His theology was only human and physical. "And the metaphysicians who profess to give an idea of God, the most consistent, according to Comte, are those who make a person of him." The theological is the metaphysical.

We have before indicated how the persuasion of superhuman power and personalities were naturally reached, while human forms and methods were retained. It is difficult for man in his speculations to lose all traces of the human. As his intelligence advanced beyond the limits of childishness through a wider sense experience and a deeper reflection, and the tendency to inquire causally into events and sensible things was extended and intensified, the world as to its existence and changes came within the causal inquiry. The eternity of existence is a much later suggestion. And you will surprise even now some persons who claim to have made some advancement in learning, if you suggest to them that the

material universe is eternal and uncaused. They will probably say: But all things must have a beginning. Nor will they see any possible exception until you ask: But is not your God who you say created the world, eternal and without beginning? To this they will assent, but show no special interest in the subject. As changes come within the constant and universal experience, beginnings or origins have become fixed impressions to the unlikely persuasion of any existence being eternal and without beginning. And the origin of Gods was entertained by the ancient Greeks as is shown by the Theogeny of Hesiod. (about 700 B. C.)

Cause extended to the abiding substance of the universe, the sum of all affirmable or even thinkable positive existence, and we must go beyond the extent and content of the universe to find *its* cause. This is impossible. And because we have reached the utmost limits of existence, the rebound calls a halt to the beginning of existence *per se*. And as we cannot get beyond the universe for its creator, and if we make believe we do by the use of words, the field is open and the arbitrarily assumed liberty to posit a creator of the universe, the antagonist compels the rout for creator of creators regressively *ad infinitum*. And how will the asserter of the creator of the universe prevent it? For we cannot deposit a thought or lodge a necessary affirmation of existence beyond the universe, and know we are doing so. A more attentive and profound consideration of the universe what it is, and we shall find there, all we are seeking after except Deities and their deeds; ourselves, our cause, origin and destiny: all we have ever realized or ever shall; all that is without cause; all cause and effect; all that knows or may or might know; and all that is known or knowable; all that suffers or enjoys; all that dies and lives again, or lives and never dies; the false and the true, the good and bad, crime and virtue, their punishment and reward; all that changes not and yet is

forever changing: the endearments and drawings of love, and the hideousness and repulsions of hate; the was, the is and the shall be; all in ordered simultaneity or succession; and all orderers. The world in itself is one, but its facets, the aspects, which hold our individual lives, command our activities, solicit our attention, deceive our expectations, sometimes reward our efforts, and often bury our hopes unrealized.

Reflecting on the creation of material existence, the meaning we seek to put into the word "create"—the coming to exist, to be something deposited in space and time that was not in space or time in any sense, the absolute and real origin of perdurable quantitive matter. The actual causal becoming of matter is not thinkable, therefore as a real intelligent thought-picture or idea, unutterable and an absolute word-gratuity, unless it be a necessary affirmation, which it is not. In what is unthinkable, viz: creation of matter, we cannot intelligently or of necessity affirm the needed factor of intelligence, or any kind or degree of power that intelligence can see to be adequate to bring something (matter) out of nothing, since creation and matter have no intelligible relation to each other as cause and effect, while we have nothing but a fictitious being to be the cause in operation. Developed theism holds to the creation of matter, and declares its creator to be an immaterial personality. The unintelligibleness of the characterized actor fits well the impossibility of the creative act. The personality is only verbal, and verbally dowered with the attributes of omnipresence, omnipotence and omniscience. These are animal and human properties extended and intensified beyond assignable limits. This means that the creator is anthropomorphic in his nature and attributes, because his creatures are, and they have no superior models than themselves enlarged and intensified. An immaterial personality is an unimaginable and not a necessary affirmable existence. Therefore an unpictur-

able fictitious being, for it is not within the known or warrantably inferred fact of real objective existence. The qualities and power ascribed to a fictitious being still leaves the being a fiction. The two attributes of omnipresence and omnipotence characterize the universe, for certainly it is everywhere, and contains and exercises all power. And all that is known or knowable, or unknown and unknowable and all knowers make up the universe.

Discussion 60. The God of the Hebrew Pentateuch with his exploits, was a towering anthropomorphism. The Hebrew tutelary God, whom the European nations and their descendants the world over have adopted, if they acknowledge any, was exclusively their tribes' God, and jealous of his peers' propagandism, which was continually making proselytes, notwithstanding the miraculous aid rendered by their tribal God. "Thou shalt have no other Gods before me." His claimed jurisdiction was not even Semitic in extent. And among the Gods he was superior and more powerful only in the physically miraculous. He outdid the Egyptian Gods in a set contest. But in their wars which he engaged the Hebrews to bring upon neighboring peoples, under promise of constant victory over them, he was not always successful. "And the Lord was with Judah, and he drove out the inhabitants of the mountains, but could not drive out the inhabitants of the valley, because they had chariots of iron." Judges 1-19. The warrior David, a man after the tribal God's own heart, in a moment of inspired enthusiasm exclaims: 'Blessed be the Lord my strength, which teacheth my hands to war and my fingers to fight." It is intuitive in human nature to ideally exalt, praise, honor, adore, worship and ascribe attributes of high titles to superior intelligence and action. "A man was famous according as he had lifted axes upon the thick trees." "Nimrod began to be a mighty one in the earth. He was a mighty hunter be-

fore the Lord." (Bible). It is intimated in the Scriptures that Sampson's and David's muscular prowess was a divine endowment. And this is accepted as true, or at least taught by orthodox teachers at the seminaries and pulpits. But Hercules, a Greek hero, after his death, was ranked among the Gods. In his physical prowess the record makes him equal to Sampson and David, and in acquiring deific attributes he reached the acclaim of Jesus of Nazareth. Anthon's Classical Dictionary says that "Hercules' twelve public services were universally known." How much was intended by this assertion, or how much is true, I will not stop to inquire. But the story is not likely to be more mythical than the stories of Sampson and David and all others on which the Hebrew and Christian and indeed all other religions are founded. They are each valid only for its special devotees, and wholly invalid to establish any but its specific religious faith. Not a miracle of either Testament was ever proven to have been done, or perhaps called in question, at the time it is claimed to have been done. We have no evidence that criticism of divine acts or of divine speech was conceived in the far off time when the miracles of the Old Testament or New Testament are claimed to have been done. For the Hebrew world was not much less immersed in the darkness of ignorance and superstition at the time of Jesus of Nazareth than when the Old Testament was imposed upon the people for historical truth.

It is more consistent with reason and what we can learn, to lodge all actualities and all possibilities in the material space and time universe, and identify this as the eternal and uncreated existence which of necessity must be the primal assumption, as we have before shown, than to postulate an eternal uncreated Being of whom we know nothing, not even that he is, nor need we from any necessary inference of what we know affirm that he is; nor can we adequately conceive a creation or

creator of the universe; nor himself any less need of creation in order to be; nor the universe more impossible of self-existing without beginning; and self-producing all that becomes and letting go all that ceases to be. and changing all that becomes different. And by so viewing the sum total of all we know, and know to be enduring, changing, producing, combining, dissolving, inanimate and animate, substance, thus avoiding the dilemma of avowing all worlds and atoms of matter to be brought into existence from non-existence, put into ordered positional relations, and set in related motions, and turning out infinitely varied phenomena to which substance, no beginning is known or can be assigned. And all this is alleged to be a created product out of nothing by an existence eternal and uncreated. Here is something well known and all that is and all that is known and inferable from it, attempted to be accounted for by something absolutely unknown and inconceivable, and need not be affirmed. Or at the failure of all rational attempts, as the inference of a creation, as Prof. Maxwell puts it: "We have reached the limit of our thinking faculties when we have admitted that because matter cannot be eternal and self-existent, it must have been created." I have previously made this quotation from Prof. Maxwell, but recite the passage here for a somewhat different consideration.

How is it known that matter cannot be of eternal duration, self-existent and self-ongoing, and the evolving source in nature's own sufficiency of all that becomes? as it is admitted on all hands that some existence must be postulated as eternal, self-existent and productive of all that becomes. And how is it so clear and manifest that there is some other existence known not to be comprised in the universe, but not known by sense; and not a necessary inference from a demonstrable fact; not a necessary affirmation; not conceivable as creator of matter, nor is its creation conceivable, nor of needful

averment. And by no possibility can the creation of matter be proven, nor a creator identified in the aspects ascribed to him. Then on what ground are we to believe in the real objective existence of a creator of matter and builder of the universe? On theism and religion. And on what do these assumptions and ascriptions rest? Man's desires and devices. Professor Maxwell admits that matter in itself considered may be what metaphysicians call necessary existence, and therefore what we claim it is.

What prevented him from taking this view will not here be considered further than to say, that probably his religious opinions were the chief if not the only reason for his objection to the eternity of matter. He has not specifically stated and developed any. But has said: "It is only when we contemplate, not matter in itself, but the forms in which it actually exists, that our minds find something on which it can lay hold." By this we understand that the Professor refers to what is called the order in creation, the design argument, the argument for a God inferred from the evident adaptations of things as secondary causes in the productions of effects; a predetermined plan, then a purposeful, coercive manipulation of material changes in the accomplishment of the plan. That there is and must be the uncaused cause of all that is caused, never an effect not produced, not caused. A quantitative substance of infinite fullness, which of necessity must be assumed, presumed, granted, without further proof demanded or needed than the necessity for it, felt by all developed human philosophic consciousness, is admitted alike by theists, pantheists and atheists.

Quantitative substance, self-actuate, unbegun as time and as time forever enduring, of infinite fulness of actualities and of potentialities that ever shall become actual. Substance by virtue of quantitative endurance; and infinite fulness, because forever producing without

loss or weariness. Unity that embraces all pluralities and all difference. When all this and not less is the primal and inevitable postulate that human intelligence intuitively finds certain, that nature reveals of itself in becoming self-conscious. About which, not that it is (I mean nature or the universe, specifically quantitative substance) for that it is, ever has been and ever must be, is felt to be a necessitated certainty and not contingent all experience confirms, all thinking and action is concerned. With this view creation, and by consequence creator, seems but an intrusive impertinence. There cannot have been an absolute and universal void. If so, it must have forever remained so. For self-creation, or beginning to exist without a pre-causative existence already, is absurd, self-contradictory, therefore impossible. The above inevitable postulate—eternal, uncaused, quantitative substantive existence, or first truth that underlies all other truths, except its own conditions of existing, which cannot be thought not to have been eternally as they now are, not existences, but necessary conditions that verify all existence whatever. For if there be positive existence, it must be somewhere at some time. I mean space and time are presupposed. This postulate defeats, or renders impossible the creation of an eternal, uncaused, quantitative, substantive existence. All that becomes must be involved in that which never became. And its creation or creator cannot be involved. If involved, whatever becomes must be evolved. No new possibilities of becoming can have been ingrafted into eternal substantive, functioning existence. What is not at any given time actual and present, and yet is to be consequential of what is, no matter how remote in time and space, is latent, imminent, involved, in what eternally has been. The essentials and now present causals effect their consequential results. And the results became partial causals. For a single effect requires many contributing causals. And though time is freighted with

events, the freight of any two successive moments, in two infinitesimally near spaces, are not without a difference. Hence, the tracing backward and broadly the causals of present products, end only in the given eternal, uncaused and universal self-operating as self-existing substance.

Uncaused and eternal existence must have all possible modes of existing and changing and functioning that shall ever occur as eternal as itself, therefore without creation or creator. It must exist and change unchanged in quantity because it has forever so existed and changed, while undergoing ceaseless alterations in place and form. It must exist and change in space and time, and be subject to their orders of being. Perpetual change necessitates perpetual motion. No motion, no change. This authorizes the affirmation that motion is the eternal and universal mode of existing of positive and actual existence, and confirms the scientific induction that matter is everywhere in motion. Space and time are motionless, therefore without alteration; then not substance nor its becomings. Then not psychic creations, all which are evolved becomings of substance. They are the most fundamental objective verities, and so the deepest subjective and philosophic pre-suppositions. And this is abundantly verified by the mathematics. These truths underlie all existence living and not living, and must be and are granted, if not otherwise, then by silent necessary implication. The unavoidable preconditions of thinking and what thinks, are not the effect of thinking its shadows as it were, and where thinking is not, then space and time and substantive existence, alike cease to be, and are thought into being and existence again! (Kant). Space and time are inextinguishable and unvarying objective verities. Hence, subjective determining and measuring validities. This I have virtually, if not in terms, said before, and may repeat.

Discussion 61. Mind or intelligent action has not

created matter, and given to it the exact orders of its interrelations, of forms, numbers, motions, qualities, properties, life and consciousness, etc. All this is implicit or involved in the inevitable postulate of eternal quantitative substantive existence, and its necessary conditions. Facts to be known must precede the knowledge of them. And what is living and conscious, must die and cease to be conscious. These attributes of life and consciousness cannot be the cause of, or have created the subject to which they belong. The subject self, ego, or the I, is not matter *per se*. Nor is the subject a universal property of matter as is weight or gravitative attraction; but emerges or becomes as property, quality and function of the life that results from a certain chemical combination of a few previous definite forms of the many forms of matter called atoms, advanced by a favoring environment. What we mean by matter is the perdurable quantitative substance as a deposit in space. And this in parts infinite in number and in space, extent, and in quantities infinitesimal and massive; moving, combining and dissolving, taking on and changing all becomings. These are self-evolved manifestations of the only known and knowing persistent substance. How in conflict is this with the popular theistic view: "We shall be able to discover that the body is scarce an essential part of man, and that the material perishing substance can never comprehend what is immaterial and perdurable." By confession then this is not a present knowledge but yet to be discovered. So are all theistic verities beyond the reach of proof.

Space and time are immaterial and perdurable verities. But they are not substantive existence in any proper definition of substance, which has motion and change, and may be living or not living. They are the *where* and *when* of substance and all its changes, the necessary presuppositions to the possibility of substantive existence, and its phenomenal becomings. They are

the ruling orders of all changes in the universe. No order or absolute disorder, is as impossible as the negation of space and time. As they are not created truths or had a beginning, so intelligent guidance in their application to events is impossible. That is, changes or events in the universe cannot be taken out of the domain of their orders by intelligent power. Scientific culture would not leave a person at liberty to say that chemical combinations, or the physiological and assimilative placing, and the life-given qualities to dead matter in the growing body, or the piled-up desert sands by the wind, are disorderly aggregates of material particles where the orders of space and time have no application. Or that the elements of internal structures are placed in order by guiding intelligent purpose as final cause. Intelligibility, because of necessary and universal order, extends infinitely further than intelligence. The latter cannot be thought to be more extended than life. And life to the non-living, is as a tapeline measure to the immeasurable.

So we may say, given, space and time and eternal quantitative substance in motions as universal and necessary mode of existing and all else follows as consequqence. We have here nature or the universe epitomized. Life and consciousness are as much involved and evolved products as water or acidity.

The present scientific outlook is that there is but *one* primal homogeneous elemental existence, called matter or some other name, but which means what has eternally existed, does now exist and must eternally continue to exist, and is of course, a fixed quantity. And what appears to be many primary heterogeneous elements eternal or so created, and were universally held to be so until very recently, as iron, gold, oxygen, etc., and their infinitely produced forms, states, qualities, uses, functions, etc., result from differential collocations and movements of the one homogeneous element. It follows then

that the chemical elements with all their difference of kind, capacity for combining and grouping and functioning, are only aggregated numbers more or fewer of differently collocated and moving units of the one homogenous element.

And having been produced by orderly integration—the mechanical placing of corpuscles or electrons by interrelating affinities executed by motion, are disintegrating by a dissolving movement called radio-activity, and re-integrating most likely into something different. All nature,—the universe, except space and time, is changing; because motion is the universal and necessary mode of existing. To exist is to act. This excludes space and time from being existences. They do not exist. They are conditions of all existence and action. Persistent forms of internal structure of similar selected groupings of matter with a compatible environment, continue essentially the same qualities and identity. Strange! In the dawn of inquiry into the secrets of nature by the Greeks, they fixed upon four elements as the constituents of all things, earth, air, fire and water. And until recent time fire continued to be held as a substance existing throughout the universe, under the name of caloric. The positions ascribed to the four elements were found to be untenable. And fire, or heat as the result of combustion—a chemical process, light, electricity and force, are shown to be not substantive existences, but to result from, to be matter in motion. Since the adolescence and growth of chemistry, the number of supposed unchangeable elements of which all things are composed, except the fancies of extreme idealism and theism and their kindred, have varied from time to time, but had reached the provisional number of 70 to 80. These have very suddenly and unexpectedly dropped to *one* homogeneous substance. And the mechanical theory of the universe,—that all changes and becomings in their causes and effects are lodged in the eternal space and time interrelations

of one uncaused substantive matter in infinite numerical subdivisions in motions, is confirmed.

One new fact and consequences that follow, sometimes require the readjustment of the entire stock of our stored up attainments to bring harmony into the assemblage. And this has obtained in the acquaintance with radium and its wonder-working. A very little, the fraction of a grain, gives off a continuous supply of heat, 3°F. without itself growing colder or losing any appreciable weight, and this for years. Appreciable, that is, by any yet devised instruments of weighing sufficiently delicate. Some of its rays or parts of itself that pass away from other parts that remain, have such penetrating power that they go through an inch thick of lead, and twelve inches of solid iron. This means that lead and iron are porous, and parts of radium are small enough to go through them. Radium is capable of other wonders, but we will not name them here. Heat is proven to be matter in motion. "In matter which is incandescent or white-hot, the molecules are vibrating at the rate of 600 million million times a second." And as to the size of molecules,—"If a cubic inch of air were magnified to sixteen miles each way, the molecules would then be no more than one eighth of an inch apart; and the number of collisions with one another in one second is nearly 500 millions." And the subdivisions of matter extend still further, for molecules are compound bodies. So say the great mathematicians.

Were it not for those ways of mechanically arranging the signs composing the alphabet of characters which have such meanings as have been assigned to their forms and to their relative positions among themselves, and the skilled manipulating of the changes in their relative positions, which discover the actual objective facts of nature in its forms, magnitudes, numbers, distances, directions, velocities, weights, functions, etc., measuring all things

and conferring certainties, man would hardly be the supreme animal.

But nothing theistic can be measured into objective certainty. Not even that there is existing or ever was, a creative and world-directive and preserving, or a human-helping God. But a devotee on reading about radium or other marvels of nature, would probably say: "Yes, all this is to the glory of God. Great and marvelous is his handiwork!" Where is the proof that there is any existence or agency that transcends the existence and powers of the universe? Is its creator, or is imminent therein but not of, the universe? Or that the objective material universe is a created thing? So far as I know the initial and final proof in Christendom to those who profess to believe it, is the Bible; too puerile a proof to merit attention, although held by thousands to be sufficient, among them some learned persons. If there be proffered what some call the evidence that nature itself furnishes in proof of its dependence, it is no more than assertive denials that nature or the universe of matter in motions as eternal manner of existing, could have always existed; and that in and of itself it is incompetent for all its manifestations. No proof of these assertions is or can be given but the unwarranted inference of nature's incompetence. And how little of nature is known from which to legitimate the inference. And no proof of a creative being but the said inference objectified into a word and the word charged with creating and working in and through all matter of phenomena. We do not admit that science gives any sanction to the inference of a real existence possessing the qualities and powers ascribed to the word God, or the possibility of an absolute creation of the material universe, or that nature is not competent to all its manifestations. If the existence about which all we know concerns, and we know is constantly changing into all the functional becomings of which we know anything, and that without discovering any director or assistant

that is not natural, or is supernatural, can we infer that some thought we have imagined and given a name to and know no more; or somebody has mistaken their own subjective fancies for objective existence; or religiously proclaimed what was false, whether consciously or unconsciously, and found followers, is real objective existence, and is competent to, and does produce all manifested phenomena? If so, whence its or his existence, powers and competency?

Matter shows no signs of not having always existed or of having begun to exist. Is it not trivial to maintain that there can be declarative evidence to set aside the negative testimony of nature and establish the creation of matter? What science has to say and what she can not say relative to matter, favors its eternal existence and its necessary potency and sufficiency for all its present and successive forms and functions, including the consciousness of itself and workings in forms called personalities. Its most fundamental known property is its persistence in space in quantities ranging through an indeterminate number of forms mutually interchangeable by means of motion which is force or energy as its eternal mode of existing; and which forms have their more or less specific qualities and functions. The most comprehensive generalization which science has reached is the unchanging quantities of matter and energy, which is the "doctrine of the conservation of energy, which corresponds to the persistent quantity of matter." There are no recognized scientific indications that there is one or are many supernatural agencies, personal or otherwise, imminent in matter or transcendent thereto, coercive and directive of motions and determining all processes and results either directly, continually and universally, or indirectly by having endowed matter and its motions with laws or relations by which all changes of material forms and their functions, and events, are worked out by these laws.

Dr. W. Hampson, M. A., Open Scholar of Trinity College, Oxford, Lecturer under the London. County Council at University College, London, Inventor of the Hampson Air-Liquefier and Author of a small but very interesting work, entitled "Radium Explained" from which I am drawing largely, makes nine forms of material existence from corpuscles to sun and nebular masses and their corresponding functions. Matter, or the substance of the universe, is everywhere in etxernal forms and internal structures. This whole of matter is divided into enormous groups of substance, the stellar and nebular systems, separated from each other and from us by such immeasurable distances that, though probably in rapid motion, no glass yet devised can render the motion visible. It is said, however, that there is reason to believe there has been historic time sufficient for an observable change, the relative positions of the stars in the constellation known as the Great Bear, appreciable to our telescopes. For the stars composing it are not now in the same relative positions as platted by Ptolemy nearly 2000 years ago. Sir William Herschel found that our sun with the whole solar system, is moving at the rate of five and a half miles a second towards a spot in the sky where we now see the constellation Hercules. Another star charted as 61 Cygni, is moving at the rate of 30 miles a second. Another star known as 1830 Groombridge, has a speed of 200 miles a second. And the shape of some nebulae indicates movement in their component parts. So that in stellar and nebular systems we find the two principles of subdivision and movement of parts within the system. Astronomers have found by the aid of powerful telescopes that the universe of matter is of immeasurable space extent; that the sweep of the most powerful glasses discovers no limits of star systems. And physics as now understood permit of no assignable limits to the extent of matter, with the continuance of the present universal order of existence. As the physics of gravitation are now recognized,

would not the outermost pull of gravity abolished because the external limits of matter were reached, land all matter in a central heap?

Can we hold without stultification, not only that there can be creation of something out of nothing, but that there can be productive creation of real concrete substance, within a given limited time of beginning and ceasing to create, that shall extend the product over the limitless extent of space? We cannot avoid averring that space is limitless, nor speak of matter without the implication of space, and space as external to ourselves as matter is, and as real, but not a substance. Nor can we allege the creation or production of space, or its limitation without discovering childish inability to think, or religious fanaticism.

Discussion 62. Are the statements concerning the universe in the two God-revealed Testaments consistent with the revelations of the telescope and the microscope? Were the unnumbered millions of star-systems and what they signify when compared with this world, and in view of their creation, in the mind either of the revelator or of him to whom the revelation was made; or had either ever heard of, or had the remotest suspicion of the possibility of such distances or existences, when it was said: In the beginning God created the heaven and the earth. And God made two great lights, the greater to rule the day and the lesser to rule the night. He made the stars also? And in the other Testament: In the beginning was the Word, and the Word was with God and the Word was God. The same was in the beginning with God. All things were made by him. He was in the world and the world was made by him? Theologians of all orthodox Christian schools hold that the Word and the words "He and "him" in the last sentence quoted mean Jesus Christ of Nazareth. He is declared to be the maker of all things, and specifically, the world in which he then was. With these statements think of the innumerable orbs, many of

them immensely larger than our sun, so distant from us that the farthest reaching telescopes descry as minute points of light, from which their light (for they must be self-luminous, and if they have attendant planets like our sun as analogy would lead us to infer, they could not be seen) traveling at the rate of 184,000 miles a second, would require thousands of years to reach us; were created from nothing, made, set in orderly positions among themselves, coerced into related motions that differ in effective action from the achievement of an inch in centuries, to thousands of miles in a second,—all produced by, presided over, imminent in everything, and held and holds in his omniscience all things and events from eternity to eternity, the power and wisdom that created and runs the universe, Jesus of Nazareth? a carpenter by trade, born of Mary, a Jewess, and who, for some expressions against the superstition and hypocrisy, i. e., against the religion of his countrymen, was arrested, tried, condemned and crucified, on the charge of calling himself the King of the Jews.

I do not hold Jesus to be the author of all the sayings or the doer of all the deeds accredited to him in the New Testament. The record is a made-up tale after the death of Jesus, by those who had too little critical intelligence to sift the circumstances if they cared to discriminate the true from the false. But they and the country, and the time in which they lived, were too ignorant of nature's fixed methods to know that really dead men do not come to life; nor thousands of hungry people feed and fill themselves with five loaves of bread and two fishes such as a family might carry on a little outing. Nor a green and flourishing fruit tree wither and die because a hungry man goes to it for fruit out of season for fruit-gathering, and in a pique says to the tree: "Let no fruit grow on thee henceforward forever." Nor do virgin ladies bear children unless impregnated by a male of their own species. And so with the rest of the stories for

the nursery, when the childish world had not advanced to the idea of the impossible, and knew no reason why one thing might not happen as well as another, when all things were possible and equally probable with the Gods or God, and knew not why human testimony could not prove one thing as well as another. And so it would where dreams and voices without bodies, and visions and divine calls, and subjective impressions, and wild reveries of the hysterical, are given and received in the community as satisfactory proof of the objective verity of what they purport to discover. And such I believe to have been the state of the society that produced and handled the literary gatherings called the Bible, in all the theistic and religious matters that are of interest to us, except those portions of said Bible that are deliberate fictions. And the like is the origin of every theism extant or extinct.

If children believe such tales, or adults did so believe at that day when the intellectual world was in its swaddling clothes, it should not surprise us. But when men to-day accept these monstrous libels against the integrity and self-mastery of nature on the testimony of witnesses clearly incompetent from lack of knowledge, it should surprise us. And this is shown when they say that God, or the Lord spake unto Moses, or that Moses saw his backsides, meaning God that created the worlds; or that the heaven and earth were created. Or that a being clearly human was also the very God that had created the world; that this being was born of a human virgin mother, and was the father of himself, or was one of a trinity of Gods and the trinity was of one God-substance. "'So the Father is God, the Son is God and the Holy Ghost is God. And yet they are not three Gods, but one God.'' He created his mother, for ''He made all things, and without him was not anything made that was made.'' The like testimony now of their neighbors, their sisters, wives or daughters, to prove like things, on the ground of

a divine revelation through a prophetic announcement of a virginal conception and birth and Holy Ghost fathering, and a baby born half God and half human, (the denouement being the baby) the very God that created all worlds and all things. And so the inauguration and establishment of a theism and a religion; after "These things were done that it might be fulfilled which was spoken by the prophet." All based on the testimony of a people that we have no evidence of any cross-examination of those who had strange stories to tell, and at an age before the birth of what we know as scientific verifiable knowledge, or criticised testimony, reposing on divine and angelic utterances evidenced by mythic voices, visions and dreams, which, current and authoritative in that day, but at this day are wholly out of date and out of fashion, and would not prove before a court of inquiry, even, that a black child born of a white mother had a white father. Men, learned in the fixedness, the uniformity and integrity of the natural relations of cause and effect, and the stability of the present order of things not only for 2000 years, but traceable through millions and millions of years in the past, or as long as one cares to take the testimony of nature, would not listen to such evidence to *create* and *establish* a theism, and a religion as has created and established the theism and religion they accept and support. It is not what men know that has founded any theism or religion, but their ignorance, what they desire or fear. And their desires and fears have generated their faith.

Discussion 63. Christian Apologetics is defined as the defense and vindication of Christianity as the perfect religion of God, for all mankind against the attacks of infidelity. (Schaff) And according to T. M. Lindsey, D. D., Encyclopædia Britannica, Article, Apologetics, it is that part of theology which vindicates the right of theology in general, and of Christian theology in particular, to exist as a science, and is occasioned by the presence of

anti-theological and anti-Christian speculation. Apologetics is therefore the scientific representation of the ground on which Christian theology rests and may be vindicated. It is the historical consequent of Christian dogmatics. The author last quoted declares there is a theology in general, besides the particular Christian theology. The polytheism of the Greeks and Romans, of Scandinavia and Mexico, even the fetichism and animism of the last developed of the human kind must be included in theology in general and have its right to exist and its apologetics would be its scientific vindication of its right for these earlier stages and progenitors of modern monotheism and Christian theism. As we do not know in what precise meaning the author used the words: "right to exist" we cannot criticize the expression. But as theology in its later stages has no better ground of facts to rest on and could be scientifically vindicated than in its earlier stages when "All mysteries of nature were explained by the action of spirits, and among the innumerable spirits on earth and in the sky, a few were raised to the rank of Great Gods." Modern theology has ignored, or concentrated, or incorporated, the many Gods of earlier ages into a trinity or unity. But the three or one do what the many did. It becomes a question on what right theology in general or particular, has the right to exist, as it cannot be and never has been scientifically vindicated. That is, it never had an objective existence that ever was or could be scientifically defended. For the final test, and ground, and need, for the assumption or proof of the existence of a God, is to account for the universe and its ongoings. By no possibility can it be, or was it ever scientifically shown, or of necessity, or from analogy of reasoning inferred, that the universe or an atom of matter was ever created. "Absolute beginnings are beyond the pale of science." And I suppose it will not be contended that a divine revelation and the miraculous, come under the purview and vindication of science, i. e., that they follow

scientific methods and are open to the scientific consciousness. And in this case absolute beginning of the universe is beyond the intellectual need of assumption. For the primal and necessary assumption is eternal and uncreated existence. And this renders needless and even absurd the notional apprehension of a creation and of consequence a creator. And modern theism is as conjectural and subjective and destitute of real objectivity to be scientifically defended and vindicated as its ancestral fetichism and polytheism.

Cardinal Newman said that theology properly and directly deals with notional apprehension; religion with imagination. As God is not now, and confessedly by the educated Christian theologian, never has been a sensible object, but a notional apprehension. And very likely whatever was apprehended as the notion would not be insisted upon as God, as God really is. Consequently those statements in the divinely and plenary inspired Bible, that directly and indirectly declare his visible and audible anthropomorphic and monstrous presence to Moses and others are fictions. As God is a notional apprehension scientifically and even verbally indefinable, as to form, character, whereabouts, or conceptually, with objective proof of accuracy, there is infinite difficulty in showing there is any real objective existence corresponding in any respect to a notional apprehension, or that there is a real or intellectual need of such allegation. Or that the proposition of a divine existence is a verity or truth, except it is axiomatic, or self-evident, or a necessary implication, because the absolute creation of the universe is self-evident, or has been historically proven, or his personality as a sensible object is as much in proof to us, as that of George Washington or Napoleon Bonaparte. "The manifestation of God in the world" says Dr. Lindsey, "is miracle, and the apprehension of it, is inspiration." Science ignores miracle and inspiration. They have never been submitted to that test. And if

they should be with success, it would be in proof that they were not miraculous. No human testimony can prove a miracle. It can only prove the ignorance of the testifier. Would it not have been as easy in the time of Homer and Hesiod to prove the objective and notional existence and deeds of Zeus when no one called his existence and deeds in question, as in the time of Moses and later, to prove the objective and notional existence and deeds of Jehovah, when no Hebrew called his existence and deeds in question? The two Gods have come down to us with like quantitative and qualitative testimony in proof of existence, creative and miraculous power. The records of Zeus and the theogeny of Gods from him have not been set aside by formal proof of their falsity any more than those of Jehovah and the theogeny of Gods from him. There was sufficient direct testimony to prove the existence of either God, if testimony could prove such existence really objective, or such records really true. Zeus and his records have gone out of fashion as true, and so into fiction, and have become literature. A new scion, but of the same common Zeus and Jehovah species, has been engrafted into the old Hebrew stump, by the posterity of the patrons of Zeus, by adding a needful element which was lacking in the Jehovah scheme, the Theotocos, God-bearing, or Mother of God. It was never adopted to any extent by the original adherents of Jehovah. And this new element of explanation of how a creative and miracle working God is produced, viz: the human way, through humanity, serves to give divinity to man and humanity to God, and is the perpetuating feature of the present triumphant theology. But it is really the triumph of Zeus and the defeat of Jehovah. I think it was Henry Ward Beecher who said: "Jesus is the Christian's God." The notional or ideal apprehension of God to the denial of his sensible manlike existence is anti-Biblical and eliminates all definiteness of conception and teaching of

what God is, and of consequence, that he is. There can be no scientific natural theology or inferential theism, because science puts us under no natural or logical necessity to affirm the universe began to exist, and so must needs have a creator, or that motion began in a motionless universe and therefore must have a starter and a continual actuator beyond and other and apart from the universe. As Bishop Pearson says in his Exposition of the Creed: "I have presupposed all things distinct from him to have been produced out of nothing by him, and consequently, to be posterior, not only to the motion, but the actuation of his will." This "presupposition" is notional, is gratuitous and arbitrary, not a necessary implication from anything we know, nor by any possibility can prove. As there is known to be sensible, concrete, quantitative material existence, then by implication, or "presupposition" there must be space. This is a natural, logical and inevitable inference. But because there is a sensible material universe that no glass can limit in vastness or minuteness, does it follow of necessity or, of reason, or from analogy of any thing we know, that it must have been created, then, of course, a creator. For it may be, and much more likely is, eternal and uncreated in its quantitative substance, and possesses in and of itself all the reason and all the power for all its changes and becomings, than it is a created thing from nothing, a figment of the human brain. Nor is it any proof of either creation or creator, that somebody, thousands of years ago said: "God created the heaven and the earth," and "All things were made by him." Nor any more evidence of it than would these expressions if uttered for the first time and by some of our neighbors, or if found in the Koran or the Book of Mormon. It is a religious dogma, and not a provable historical objective fact, as it purports to be and is believed to be. Nor can the millions of beliefs in the truths of these words, or the good and evil accomplished by religions founded on

belief of a creative God, (and they both have been very great) or religious consolation and hope, take the literal falsity out of these words and render them probable or even possible, by way of proof.

What we sincerely and dogmatically believe to the controlling of our lives is rendered efficacious by our faith, and not by its objective verity. It is on this ground that all theistic religions make their converts. No theory of the creation of something out of nothing has ever been constructed or attempted, so far as I know. That is, an intelligible conception or account of *how* creation of the material space and time universe was produced, with the adequateness of the method to the result; or an intelligible view of the sufficiency of the cause named to the effect. It is easy enough to say, God could do it, or the creation was effected by the fiat of the Almighty. This verbiage conveys no proof of the creation, nor that there was or is an Almighty to create, nor that his fiat could create the material space and time universe; not more proof or evidence of it, because virtually said thousands of years ago, than if uttered for the first time to-day. In saying this, of course, I deny all divine revelation, inspiration, illumination, prophetism, etc., as real, genuine, proven facts, and hold their pretensions as objectively baseless religious dogmas, which faith in them makes true and real to the believer.

Discussion 64. A scientific view of the universe does not warrant the deduction of its creation, or of its creator, or the absolute origin of matter, or that God evolved the universe out of himself, as was argued by Sir William Hamilton. Consequently, Christian theology which presupposes as most fundamental to it, a creator and the creation of the universe, and without this objective and real truth, no *theos* nor theology has an actual and real foot to stand upon. And whether false or true Christian theology cannot be scientifically defended nor vindicated. If false, this will be allowed by all. If the

manifestation of God is miracle, and the special apprehension of it, is inspiration, when the miracle is proven and God is recognized by the methods of science, miracle ceases to be miracle and God becomes a scientific object, as is universal gravitation. For what can be proven by scientific methods the miraculous is thereby eliminated. Science is concerned about the natural and knows no supernatural. It rests on fundamental principles self-evident or demonstrable, and on facts of sensible observation, or verification by experimentation, and all its explanations must be rational. Or, if it deal with the scientific consciousness as the forestalling guide to discovery, and declare a theoretical cause of a known phenomenon, it must give its idea a concrete or a dialectical construction; and show *how* such a cause would produce the phenomenon in question; and if practicable, proceed to prove it, as did Franklin and Marconi. Or to render the theory probable, show that analogous causation has produced similar effects. But to show, as would be easy, that all theistic claims are similar in their origin in the common nature of man, in his tendency to seek ultimate cause for all his senses discover, and in this achievement there comes the like satisfaction, mental exaltation, even ecstatic emotion, like strength of persuasion and of conviction that he has it in his God whether Jehovah, Zeus or Jesus, is to defeat the exclusive pretensions of the Christian and any other theology from being the only true one. And theology common to animism, polytheism, Jehovahism and Christianism, is to defeat all satisfactory theism to the cultured naturalist. Dr. Lindsey admits that an "Historical study of religions shows that every religion has professed to be founded upon a divine revelation, and claims for itself the same supernatural sanction which the Christian theologian declares to be the exclusive possession of Christianity." This exclusive and even common theistic claim cannot be defended. For like every such claim it lacks

verifiable proof, and shares that which is common to all theistic beliefs, faith in its particular theism. An appeal to what the various theistic religions have accomplished disproves the Christian claim not only, but the influence of any real extrinsic *theos* as underlying and promoting any religion. For the theism of Jews modified by Gentiles and called Christian, had been equaled if not surpassed along its own lines of moral and even ceremonial achievement, 500 years before the birth of Jesus, by the atheistic ethics of Gotama and his disciples, shows the whole matter of Gods, devils and religions to be a subjective natural, early human, inferential deposit and outgrowth from man's desire to know the ultimate cause of his experiences, and his disposition to suppress that which makes for evil, and promote that which tends to well-being. And so we learn the origin of evil spirits, demons, and finally devil, and good spirits, angels, Gods and at last one Supreme God.

The parallel lines along which theistic Christianity and atheistic Buddhism have traveled even to the use of the same terms and symbols to express common results reached by starting from extreme opposites, in internal emotions and external effects, are very striking, and to the defeat of objective theism. For if atheism to the denial of all theistic existence, power and influence finds "The most Excellent Way," to restrain wrong-doing and the desire for it, to uplift the thoughts, purify the heart from lustful desires and the hands from crime, do away with wars, condole with the bereaved, declare the universal brotherhood of man, and work for universal peace, and show mercy and love to all sentient nature as did atheistic Buddhism—Gods and theism appear in their true light, as wholly subjective—our own creations, and destitute of all real objectivity. It is amazing how much of our image-making is attributed to supernatural agency. The whole theistic and demonistic world belongs to this class. The insane asylums are full of it. And much

that belongs to common daily life partakes of it. How often do we hear the words "God willing." "If providence permit." A United States Senator in the Senate chamber is reported to have said, the other day: "I am a firm believer in the intervention of Divine Providence in the affairs of men." How criminal has been this religious superstition of divine and demoniac "intervention in the affairs of men." Witchcraft, magic, sorcery and heresy, and their priestly ordered remedies, burnings and hangings, prevailed for centuries over Europe. "For more than 1500 years," says Lecky in his Rationalism in Europe, "it was universally believed that the Bible established in the clearest manner, the reality of the crime, and that an amount of evidence, so varied and so ample as to preclude the very possibility of doubt, attested its continuance and its prevalence. The clergy denounced it with all the emphasis of authority. The legislators of almost every Christian land enacted laws for its punishment. Acute judges, whose lives were spent in sifting evidence, investigated the question on countless occasions, and condemned the accused. Tens of thousands of victims perished by the most agonizing and prolonged torments, without exciting the faintest compassion. In almost every province of Germany, but especially in those where clergical influence predominated, the persecution raged, with fearful intensity. Seven thousand victims are said to have been burned at Treves, six hundred by a single bishop of Bamberg, and eight hundred in a single year in the Bishopric of Wurtzburg. This long series of persecutions extended over almost every Christian country, and continued for centuries with unabated fury. The Church of Rome proclaimed in every way that was in her power the reality and the continued existence of the crime. She taught by all her organs that to spare a witch was a direct insult to the Almighty, and to her ceaseless exertions is to be attributed by far the greater proportion of the blood that was shed. Almost

all the great works that were written in favor of the executions were written by ecclesiastics. Ecclesiastical tribunals condemned thousands to death, and countless bishops exerted all their influence to multiply the victims. And the persecutions that raged through Europe were supported by the whole stress of the infallibility of the Church. But on this ground the Reformers had to conflict with their opponents. The credulity of Luther, manifested on all matters connected with diabolical intervention was amazing, even for his age. 'I would have no compassion on these witches,' he said, 'I would burn them all.' No feature was more clearly marked in the character of Luther than an intense sense of sin. He has declared how, in the seclusion of the monastery, the gates of hell seemed to open beneath his feet, and the sense of hopeless wretchedness made life a burden. Like many another person of vivid imagination perplexed with religious difficulties, a theological atmosphere was formed about him, and became the medium through which every event was contemplated and colored. He was subject to strange hallucinations which he invariably attributed to the direct action of Satan. Satan became the predominating conception of his life. The devil often appeared to his vision and his audition. He threw an ink-bottle at the devil in the castle of Wartburg. Every form of disease might be produced by Satan or by his agents, the witches, and none of the infirmities to which Luther was liable were natural, but his ear-ache was peculiarly diabolical. Hail, thunder, plagues, are all the direct consequences of the intervention of spirits. The devil could beget children, and Luther had come in contact with one of them. And Luther earnestly recommended the reputed relatives to throw the child into the river, in order to free their house from the presence of the devil. Witchcraft did not present the slightest improbability to him, and he continually asserted the existence and frequency of the crime and proclaimed the duty of burning the

witches. The popular belief asserted the existence of witchcraft. One of the most ordinary operations of the witch, the devil acting at her command, was to cause tempests which, it was said, often destroyed the crops of a single person, leaving the country around in extreme drought. If any one suggested doubt that Satan possessed such power or exercised it, he was speedily silenced by a precedent out of the Bible of supreme authority, which no one dared or was inclined to dispute. We read that the devil, by the permission of God, afflicted Job and among the means used was a tempest which destroyed the house and his sons and daughters wherein they were feasting. And the same infallible authority and precedent would give the devil, through the witches and evil spirits, power to bring upon men and the race, all diseases and epidemics, the black death and all others. For Satan smote Job with sore boils from the soles of his feet to the crown of his head. Satan is called the prince of the power of the air, the spirit that now worketh in the children of disobedience. This text, from the apostle Paul, would warrant those who hold the Bible to be plenarily inspired, to infer that disastrous happenings in the meteorological world were in the power and will of the devil. Witchcraft, sorcery and other names which mean much the same thing,—in compact with, or under the influence of the devil, was not an easy matter to prove. The proof must generally come from confession of the accused. And torture was the judicial method to extort self-accusation.'' ''To the parent stock of the Aryan family of races,'' says Henry C. Lea, in his ''Superstition and Force,'' ''it would appear to have been unknown; at least, it has left no record in the elaborate Hindu law as it has existed for 3000 years.'' But whether the Indian ancestors of the Aryan races were afflicted with the superstitious belief in Satanic and demoniac existence and agency in human affairs, or not, their posterity in Europe took it as part of the religion

which they adopted from its Semitic authors, and for centuries governed their practical lives to the fullest extent of the original demand. And belief in superhuman beings, or spirits good and bad, as intermediate between Gods and men, and their mingling in the concerns of men, is common to all primitive races and was specially prevalent in medieval Europe as an essential element in Christianity. Nor did men begin to get the better of that dominating feature in the Christian faith, nor can they consistently, for Satan and demoniacs are as distinctly declared in the Old and New Testaments, as God himself, until faith in the supreme and unerring truth and authority of these writings are weakened in our convictions. And there seems to be no complete remedy for the superstition until the supernatural is cast out of our convictions by an acquaintance with the undeviating laws or interrelations of nature's differences, and nature's eternal comprehensiveness of all cause and effect and procedure, takes its place. For the laws of physical and psychical nature are not enactments of a supernatural, imposed upon or worked into nature from without, but are the necessary and inevitable correlations of nature's diversities; reciprocal relations, interdependencies; and functions and effects are consequential.

Lecky, in his "European Morals" Vol. 1-18, says: "Among the early Greeks, the notion of diabolical possession appears to be unknown. A demon in the philosophy of Plato, though inferior to a deity, was not an evil spirit, and it is extremely doubtful whether the existence of evil demons was known to the Greeks or Romans till about the time of the advent of Christ. The belief was introduced with the oriental superstitions which then poured into Rome, and it brought in its train the notions of possession and exorcism." But it appears that the Hebrews were familiar with their devil as early as they were with their God, perhaps on the principle that every affirmation carries with it, by implication, its op-

posite. The demon of Socrates was the contrary of the demon of Christianity. I quote from Plato's Works, Bohn's Vol. 1-18: "Perhaps it may appear absurd, says Socrates, that I, going about, thus advise you in private and make myself busy, but never venture to present myself in public before your assemblies and give advice to the city. The case is this: I am moved by a certain divine and spiritual influence. This began with me from childhood, being a kind of voice which, when present, always diverts me from what I am about to do, but never urges me on. This it is which opposed my meddling in public politics."

Discussion 65. In the Fourteenth Century, the great pestilence of all historic ages occurred, the Black Death, which nearly dissolved society, and gave occasion for great emphasis to Satanic influence as cause of all human calamities. "It has been estimated that during the six years of its continuance in Europe, 25,000,000 or one fourth of its inhabitants, perished. There are no proper statistics of the number that died. But it is said that in China, 13,000,000 died, and in the rest of the East, 24,-000,000. Africa suffered with the rest of the world; 62,-000,000 of human beings perished in a few years of one common disease. And no father God intervened to stay its ravages, or to suggest its cause or remedy or way of avoidance. Or, is it true that the saints of the church were in the right of the matter, and God had given over mankind to the malice and fury of the devil to work its destruction in witchcraft and the black death without any reservation as he had made in behalf of Job? Or is the deist right,—there is a God who has created and set the world in order and its ongoing, and then abandoned it? Or most reasonable of all, is the atheist right; there is no creator of the world, or loving and protecting father of mankind, the world of matter exists eternally, without antecedence of time, or spirit, or deity, under the causative guidance of changing physical relations or

laws. For material nature is eternally in motions as way of existing, since it must exist either in motion or not in motion, which bring about all events, with no supernatural causes to be praised or blamed for what occurs or does not occur. There was no beginning of motion, as there was no beginning of matter, space or time. And intelligence, cognition, to know and feel, to have sense perception, intuitive and reflective judgment, are functions, weak or strong, of specific and positional and moving interrelations of matter, called animal organisms. And intelligence, with volitional movements of its organism, which may be a causal factor in some effects, must oppose other and defeating relations that shall change human calamities into blessings, as it has done in sanitary and other sciences. There was sufficient reason for the Hebrew and Christian God to intervene and tell Saul that his father's asses were found, and to protect Balaam's ass from Balaam's abuse of her, to give the ass speech and language to make complaint in her own behalf, and tell Balaam why she turned aside and his foot was hurt against the wall; that she was afraid of the angel with his drawn sword that stood in the way. But in all his calamities under the deific and paternal regime of the Christian religion, men have not been divinely forewarned that they might avoid, prevent or remedy disaster. And in religious contentions which have resulted in murders and wars provoked by dogmatic and ritualistic differences (bring to mind the thirty years war between Catholics and Protestants) which have separated Christendom into hostile sectaries, none of these questions have been settled by the voice of God declaring who was right, as was the question between Balaam and his ass.

On the ground perhaps, that the party believed that what he contended for was essential to salvation, and what he opposed was damnable and its teaching and practice would undoubtedly lead men to hell, it is diffi-

cult to see, how such believer could fellowship those who hold views antagonistic to his own, and be consciously self-consistent. And Lecky relates: "We shall find no justification for the popular theory, if we consider the actual history of the Church since Constantine, that beneath its influence the narrow spirit of patriotism faded into a wide and cosmopolitan philanthropy. In the new faith the range of genuine sympathy was strictly limited by the creed. According to the popular belief, all who differed from the teaching of the orthodox lived under the hatred of the Almighty, and were destined after death for an eternity of anguish. Very naturally therefore, they were wholly alienated from the true believers, and no moral or intellectual excellence could atone for their crime in propagating error. The eighty or ninety sects into which Christianity speedily divided, hated one another with an intensity which extorted the wonder of Julian and the ridicule of the Pagans of Alexandria; and the fierce riots and persecutions that hatred produced appear in every page of ecclesiastical history. The Donatists, having separated from the orthodox simply on the question of the validity of the consecration of a single bishop, declared that all who adopted the orthodox view must be damned, refused to perform their rites in the orthodox churches which they had seized, till they had burnt the alter and scraped the wood, beat multitudes to death with clubs, blinded others by anointing their eyes with lime, filled Africa, during nearly two centuries, with war and desolation, and contributed largely to its final ruin. The childish and almost unintelligible quarrels between those who maintained that the nature of Christ was like that of the Father and those who maintained that it was the same, filled the world with riot and hatred. The Catholics tell how an Arian Emperor caused eighty orthodox priests to be drowned on a single occasion; how three thousand persons perished in riots that convulsed Constantinople when the Arian

bishop Macedonius superceded the Athanasian Paul; how George of Cappadocia, the Arian bishop of Alexandria, caused the widows of the Athananian party to be scourged on the soles of their feet, the holy virgins to be stripped naked, to be flogged with the prickly branches of palmtrees, or to be slowly scorched over fires until they abjured their creed. The followers of St. Cyril of Alexandria, who were chiefly monks, filled their city with riot and bloodshed, wounded the Prefect Orestes, dragged the pure and gifted Hypatia into one of their churches, murdered her, tore the flesh from her bones with sharp shells, and flung the mangled remains into the flames. The death of Arius took place suddenly, when he was about to make his triumphal entry into the Cathedral of Constantinople, his bowels, it is said, coming out. His death never seemed to have been regarded as natural, but was a matter of controversy whether it was a miracle or a murder.

And so the tale of crime goes on through volumes and for centuries. And those without prejudice and familiar with Tillemont, Gibbon, Millman, Lecky, Draper and others who have searched the early annals of Christian history, may hesitate to decide whether or not Christianity has occasioned more virtue or crime, bound up more hearts wounded in sentiment and by fear, or physically wounded more unto death. One thing seems reasonably certain, there have been as many Neros in the church as out of it, working for, as against its pretensions. And the reproach of Mohammedanism that its early conquests were by the sword, "conversion or tribute" its method was less damnable than the massacres, tortures, imprisonments and confiscations, used by the Christian Church, from and after the accession of Constantine, i. e., after it had power to enforce its will, until the church had conquered the world by fear and crime, and not by persuasive reasoning grounded on the demonstrated proof of its dogmatic pretensions.

The question whether a certain death was a miracle or a murder, is suggestive whether these contrasted expressions were always so in fact; whether a miraculous death might not be a murder, since Gods and devils were believed to commit them. Or have such, by virtue of their superior natures and greater powers, right over mankind and their well-being, as man claims and exercises rights over the inferior animals? and brings to mind what the Christian holds that the true God put into the mind of his prophet, Isaiah, 45-7, to declare concerning himself: "I make peace and create evil. I the Lord do all these things." The Bible contains legitimate grounds for all the criminal working out of its religious idealism that actually occurred as soon as its advocates had the physical power to do so. And this power was attained by the church over all Europe, Northern Africa and Western Asia. "In the dual governments everywhere in Europe," says Draper in his Conflict Between Religion and Science, "the spiritual had obtained the mastery; the temporal was little more than its servant." The assumption of the world's creation by man's creator would give such a being the absolute right of control over his creatures and power to use it, and this in the judgment of the creatures themselves. The assertion and exercise of that right are abundant and unequivocal in both Testaments. And the declaration of punishment eternal for disobedience ("Whosoever shall keep the whole law, and yet offend in one point is guilty of all") should stir the efforts of believers to enforce extreme measures to prevent human beings from falling into the hands of the unreconciled God, who is a consuming fire. To suffer torture of body even unto death, if this shall succeed, is a mild remedy against eternal burnings. And a compact, an agreement with Satan to advance his interests and hinder souls from reconciliation to God through the atoning suffering and merits of Christ; to enter into league with the devil to promote the very thing to destroy which the

"Son of God was manifested, that he might destroy the works of the devil," was the very acme of disobedience, surpassing in heinousness, because of its contempt of the special means which God had prepared for man's redemption, the commission of all things forbidden in the decalogue, and the omission of all things commanded, and merited torture unto recantation, or unto death. For unless the compact could be broken, the heretic was doomed to eternal punishment, and if it could be broken by his temporary suffering here, the heretic was saved and satanic influence which he was spreading to the eternal damnation of others was stopped. And instead of "conversion or tribute or death," it was, "acknowledge Christ in the sense of my creed, or death." And Christ never appeared to tell them which was right or wrong, or that persecution was wrong, or to redeem his promise. "And lo, I am with you alway, even unto the end of the world, Amen!" The interjection is the emphasis upon the certainty of the fulfillment of the promise. Was it fulfilled? Has he ever fulfilled it? How man persists in clinging to, and objectifying and personifying his purely subjective ideas, and makes them Gods, devils and evil spirits, and sets them over and in the world as its active agents; and fancies heaven and hell as their respective homes. One he locates above the earth, the other beneath it, when the earth was flat and fixed. Now it is round and moving, he is puzzled to locate either heaven or hell. That the devil exists and exercises supernatural power we have the same and equal Bible proof of, that God exists and exercises supernatural power. And to give up this proof of the devil's existence, is to renounce the same proof of God's existence. For the existence of each is so dependent on that of the other, in the Bible narrative, that the denial of either implies the incompetency of the Bible to prove the other. And to say that the existence of the world necessitates its creation, and of consequence its creator, and God's existence is secure of

proof, without the Bible proof of it, is to assert what is neither a logical nor a natural necessity from the fact of the existence of the world. And to postulate the eternal uncreated existence of matter in motion, and all phenomena as consequential upon changing material interrelations, to the denial of creation, is a scientific and philosophic necessity, and infinitely more reasonable than a creation, and as a consequence a creator, whose existence and creative power is a gratuitous and merely verbal assumption, since it cannot be pictured in thought, and if made involves the same supposition of eternal and uncreated existence as does the universe, without the needless and absurd assumption of its creation. And we fancy we have accounted for ourselves and all we know by assuming an unknown and unthinkable creation and creator.

In England, says Lecky, the Reformation was the signal for the immediate outburst of the witchcraft superstition, and there as elsewhere its decline was represented by the clergy as the direct consequence and the exact measure of the progress of religious scepticism. Probably its ablest defender was Glanvil, a clergyman of the English Church; and one of the most influential was Baxter, the greatest Puritan. It was maintained by John Calvin in his Murder of Servetus, for his heresy of views as judged by those entertained by Calvin. John Wesley, the greatest religious leader of the 18th Century, was among the latest of the supporters of witchcraft. And why did the church, Catholic and Protestant, believe in witchcraft and witches, and torture and kill those their fancies had possessed with devils, so long and without pity? some so bewildered as to declare themselves possessed. Because the Bible asserted their existence, and enjoined their execution: "Thou shalt not suffer a witch to live." Here is the authority and sanction for what they did. And why did they cease to execute the divine mandatory injunction? Because there arose in the minds

of men a questioning of the true diagnosis of diabolical possession, to account for some eccentricities in the conduct of certain persons, as satanic cause of some happenings to some other persons; and also doubts of the divine authority on Bible license to torture and kill those who manifested the eccentricities. And the doubt and denial spread so rapidly, that soon the civil powers prohibited these torments and executions. So rapidly indeed, that Buckle, in his History of Civilization in England, as quoted by Lecky, says that in 1660, the majority of educated men still believed in witchcraft, but in 1688 the majority disbelieved it. I think this can hardly be true of the Catholic clergy even to-day. The hierarchy of the Catholic Church, allowing there is harmony between what it believes and what it advocates, since that hierarchy learns little or nothing that recognizes the falsity of what it has passed upon, for its judgment once delivered is infallible and that forever. It is not likely that it teaches to-day that demonaic possession was a mistake of past ages, is not now and never has been a human infliction, and its persecution and that of other forms of heresy was criminal. But an infallible church founded and guided by an infinitely intelligent, good and Almighty God, can not be mistaken and has not been.

The church claims its right and duty to seek out, prosecute and punish heretics. I quote from Hunter's (Catholic) Outlines of Dogmatic Theology. "A proposition is heretical which is inconsistent with the teaching put forth by the church in pursuance of her infallible authority as being part of the Revelation which she has received. A heretic is one who having been baptized holds an heretical position." And as to the right and duty of the church to punish heretics I quote from the Catholic Dictionary and Encyclopædia, Article, Inquisitions, in no age of Christianity has the church had any doubts that in her hands, and only in hers, was the deposit of the true faith and religion placed by Jesus

Christ, and that, as it is her duty to teach this to all nations, so she is bound by all practicable and lawful means to restrain the malice or madness of those who would corrupt the message or resist the teacher. Some have maintained that no means of coercion are lawful for her to use but those which are used in the internal forum, and derive their sanction from anticipated suffering in the next world. The power of the church, according to Fleury, is purely spiritual. The overwhelming majority of the canonists take the opposite view, namely, that she can and ought to visit with fitting punishment the heretic and revolter. For many ages after the conversion of Constantine it was easier for the church to repress heresy by invoking the secular arm than by organizing tribunals of her own for the purpose. Reference to ecclesiastical history and the codes of Justinian and Theodosius, show that the emperors generally held as decided views on the pestilent nature of heresy and the necessity of exterpating it in the germ before it reached its hideous maturity, as the Popes themselves. They were willing to repress it; they took the church for the definition of what it was; and they had old-established tribunals armed with all the terrors of the law. The bishops, as a rule, had but to notify the appearance of heretics to the lay power, and the latter hastened to make inquiry; and, if necessary, to repress and punish. But in the thirteenth century, a new race of emperors rose to power. Frederic II. perhaps had no Christian faith at all. John of England meditated, sooner than yield to the Pope, openly to apostatise to Islam; and Philip Augustus was refractory towards the church in various ways. The church was as clear as ever upon the necessity of repressing heretics, but the weapon—secular sovereignty—seemed to be breaking in her hands. The time was come when she was to forge a weapon of her own; to establish a tribunal of incorruptness and fidelity of which she could trust. Thus arose the In-

quisition. Saint Dominic is said by some to have first proposed the erection of such a tribunal to Innocent III., and to have been appointed by him as first inquisitor. Other writers trace the origin of the tribunal to a synod held at Toulouse by Gregory IX. in 1229." Thus originated the "Holy Roman and Universal Inquisition," and for the purpose related above.

Discussion 66. Whether Christian authority in its extreme exercise can extend beyond ex-communication, the righteousness of inflicting corporal punishment for heresy of doctrine or conduct towards ritual or any other conduct that did not violate the code of civil ethics; or involve civil rights or the peace of the community; and the physical and psychical fact of demoniac possession or obsession; or that there are demons; are questions among mankind that are not likely soon to be determined by universal agreement. Nor whether the inquisition was used with the hesitancy, patient and thorough investigation, and the accused defended by counsel, as maintained by Catholic writers, or their denial by non-Catholic writers. One thing is certain, the Reformers were as cruel persecutors for heresy against their distinctive creed, as were the Catholics against theirs. And it may be a question for philosophic discussion, whether the teaching put into the mouth of Jesus, supplemented by many passages in the Old Testament, did not legitimately issue in its after development in the Catholic hierarchy and ecclesiastical system. It is true that Jesus is credited with saying: My kingdom is not of this world; if my kingdom were of this world, then would my servants fight. This was said, if it was said by Jesus, as the most fitting thing that could be said under the circumstances, in his own defense, when his fate of crucifixion confronted him on the charge of a capital offense against the throne of Caesar. But it would not be said by Christians that his kingdom did not embrace this world in its intended subjugation. And when his church

and the world-government and teaching were united and the church assumed the supremacy over the world as under Constantine, and for centuries after, and still remains united with many nations of Christendom; in an important sense his kingdom is of the world as well as in and for the world, and his servants might fight for it. At all events they have done so. And the Christian may say what followed was foretold by the prophet Daniel. "And in the days of these kings shall the God of heaven set up a kingdom which shall never be destroyed, but it shall break in pieces and consume all these kingdoms." This implies violence and war. Nothing is clearer than that the reported preaching of Jesus was grounded in the idea of absolute monarchy, and not in the idea of an authoritative and participating democracy. And nothing else but absolutism could come out of Hebraism. And the inference is natural and easy if not inevitable, that the head of this kingdom or church was to be a monarch or king, Pope or universal Father. And the absoluteness of his authority is symbolized by the deliverance of the keys to a person, and by the commission to bind and loose on earth that which shall be bound or loosed in heaven, delegated to this person, and indicates absolute monarchy; and is that which caused the believing Catholic to look upon ex-communication with such horror. I look with grave doubts upon the utterance by Jesus of this language. It sounds too much like an after thought to supply a need which a well developed doctrine required to sustain it. And other portions of the gospels provoke like suspicions. It is altogether a matter of uncertainty what was the real character of Jesus, what he really said or did. And this seems reasonable when it is remembered that Jesus left no writings, perhaps was not able to write. For he is said to have no learning. And it seems to be held as evidence of his divinity and omniscience that he had none. It is characteristic of all proselyting theologies and religions to persuade their

votaries to the point of subjective belief, both by the flatteries of heaven and the intimidations of hell; but not to the point of objective verification of what they declare to be true. This is beyond the susceptibility of the theme. That what they preach was and is objectively true, and will turn out as they say, they can offer no further proof than somebody, centuries ago—Moses, the so-called prophets, Jesus Christ, his apostles and others, said so. That they said so, may be doubted, having no more evidence for it than the Bible; and there is none. And if they did, so far as what they said was subjectively ideal to them and nothing more; as to us, concerning God, creation, the future life, the divinity and virginal conception of Jesus, etc., belief of these things by them, was no more objective proof to them, than the subjective idea of them is objective proof to us. The present purpose is achieved when people *believe*. This is the cardinal and saving virtue of all religions that save men's souls. But ultimately these problems are not solved, not even touched, by our belief or non-belief. But faith serves as strongly in subjective influence, the object of it being chimerical, as if true and substantial; with the guilt of murder on the soul, as the innocence of unoffending virtue. "If thou canst believe, all things are possible to him that believeth." This is a truism viewed in one aspect of its meaning, but not the usual one. If I believe that the moon is a great cheese, while I so believe, it is possible to me that it can be, and is a great cheese. In this view all things are possible to him that believeth. If Jesus intended this meaning to his expression, it was a mere witticism, and does not seriously concern us. But the meaning taken by the Christian is, that what we believe to be objective truth on Bible authority is true as there stated; or in some way is made true by our faith. Jesus says: "Have faith in God. Whosoever shall say unto this mountain: Be thou removed, and be thou cast into the sea; and shall not doubt in his heart but shall

believe that those things which he saith shall come to pass, he shall have whatsoever he saith. Therefore, I say unto you, What things whatsoever ye desire, when ye pray, believe that ye receive them, and ye shall have them.'' This is the language of an enthusiast that has no idea of the fixed natural relations between cause and effect, as that relation was not recognized in the age in which Jesus lived, certainly not by the Jews. Nor can those who put plenary faith in the Bible believe it now. Desire and faith of themselves, have no power to move a grain of matter except the living body of matter which is the seat of desire and faith, and that not directly. If the point is, that it is impossible to have that faith which accomplishes all our desires, it is a play with words—an Irishism. Commentators interpret the passage as intended by Jesus to refer not to the removal of physical, but moral obstacles to the progress of his kingdom. But if he had so meant he could have so said. The substance of the passage is several times repeated, and usually seems suggested by physical antecedents, as the withering of the accursed fig tree. But commentators are advocates of the cause they have espoused and must be faithful to their client, by making the testimony favor what they wish to prove. But it is impossible for them to prove that either by faith or without faith, God has removed any ''moral obstacle'' to the progress of Christ's kingdom, in any other sense than the Greeks proved that Zeus removed obstacles to the progress of the kingdom of Zeus. Events sometimes transpired as his advocates desired, prayed that they might, and had faith that they would, and Zeus had done it. And so has the ''Blessed Virgin Mary'' to the Catholic. This is the kind of proof and no other that victors of battles have that induces them to raise anthems of praise to the God of battles for their victory.

Discussion 67. The geographical and time-extent, or multitudinous advocates of any religion is no evidence

of the truth of the underlying theology. For theism is wholly subjective and admits of no real objective verification. "Enthusiasm is nothing but a misconceit of being inspired. Enthusiasm takes away reason and substitutes in the room of it the ungrounded fancies of a man's own brain, and assumes them for a foundation both of opinion and conduct. An enthusiast is one who imagines he has special or supernatural converse with God, or that he is divinely instructed or commissioned. Let an enthusiast be convinced that he or his teacher is inspired, and acted on by an immediate communication of the divine spirit, and you in vain bring the evidence of clear reasons against his doctrines." The derivation of the word signifies inspired, enthused, possessed by *Theos* or God. And the above quotation is a characteristic description of the lives of Jesus, his apostles, the old prophets, such men as Luther, Calvin, John Alexander Dowie, the Mohammedan Dervishes, the Monastics of the earlier Christian centuries, and theistic zealots of all time and every name, all in fellowship with the miraculous, that is, the finding in our ignorance satisfactory cause of what we do not know. The ultimate cause of all things is found in the word God, to which is ascribed in endowment language, eternity of being, creation of the material space-and-time-universe, diffusion of matter in space, and the putting of all into orderly motions. This is all destitute of any reality known to us. If the productive or creative imagination is designedly the recombining of experiences into new images, it is not a work of the imagination, for man has had no experience of the creation of matter, nor of the direct movement of any matter by mental agency except the little living conscious matter which constitutes earthly life.

There are those who have carried theistic enthusiasm to the greatest excesses in certain lines, as Simeon Styletes, who, according to the legends of the saints, stood for thirty years on a pillar sixty feet high and only

one foot square on top, enduring summer's heat and winter's frost, in constant prayer or thanking to God for the many mercies of which he was the recipient. *Draper.* Sometimes these zealots of theism, at war with naturalism, were in agonies of hallucinated sense experience, sometimes in raptures of pleasures. "St. Anthony was sorely tempted of the devil, who appeared now as a fascinating woman, now as a dragon, and once broke through the wall of his cave filling the room with roaring lions, howling wolves, growling bears, fierce hyenas, crawling serpents and scorpions."

Exclusive devotion to theism in literally following the teaching of Jesus, bewilders the intellect and deranges the clearness of sense perception. Hundreds of thousands of men and women abandoned the social, wedded, workaday, practical, business life and all mental striving to attain a knowledge of nature. There was no determinate fixed nature of things, anything could be produced or defeated by good or evil spirits. All desires could be achieved by prayer. They were following the instructions of the great moral teacher of the Christian world. "What things soever ye desire when ye pray, believe that ye receive them and ye shall have them." "All things whatsoever ye shall ask in prayer, believing, ye shall receive." "If ye shall ask anything in my name, I will do it." "Ask and it shall be given you, seek and ye shall find." "Lay not up for yourselves treasures upon earth. But lay up for yourselves treasures in heaven." "Take no thought for your life, what ye shall eat or what ye shall drink, nor yet for your body what ye shall put on."

It is contrary to all experience and all analogy of reasoning to maintain that the interpretation and construction and practical exemplification of a verbally expressed religion, given near the lifetime of its founder, is more remote from the intention and teaching of the founder, than in ages farther removed from the life time

of the founder; that distant future ages, grown very unlike the age of the author in scientific acquaintance with nature, in intellectual development, the rejection of a theosophic, a theophanic, a mythic and mystic philosophy, which characterized the founder, his people and his age, and the adoption of a scientific and natural philosophy of nature; that such a people discerns more clearly and fulfills more nearly the real purposes of the originator. Jesus praised poverty, condemned riches, advised against labor. Prayer and faith were the means by which all need and all desire were to be satisfied by the forthcoming of the things prayed for. To practically realize his assurance was the goal of effort for centuries. No one need starve, freeze, be long sick, or die unless they desired to, or neglect the universal remedy. No mother need relinquish the babe from her bosom and deliver it to the embrace of the grave.

His economy of life was diametrically opposed to the present economy of Christendom. Was the latter reached by copying the former? It is the advocate determined to win his cause by any means who, informed, can maintain that in methods and in fact, this is a Christian age, and a Christian country; and our distinction from countries our disdain calls heathen, is because they do not acknowledge nor follow the Gods of the Bible. And hence their inferiority in scientific, inventive and material, social and political advancement. And because Christendom does, hence it has obtained these advantages. Nothing could be further from cause and consequential effects. This is manifest when the requirements of Jehovah, the God of the Old Testament, or of Jesus, the God of the New, are compared with the actual religious life of Christendom. And also what Christianity attained in its first 300 years, until it united with the civil government, became political and of this world.

It is unlike the requirements of Jesus in what Christendom most earnestly and most generally seeks

after and in its mode of attaining it. And in propagating what it calls "his kingdom" it does so by methods he did not order, and by means he emphatically condemned the use of, as the distinguishing marks of his followers and his kingdom. His kingdom was not of this world, nor was it to be advanced by copying the methods of the world. Its resources and ends were directly and wholly supernatural. His advocates were sent forth and forbidden to provide gold or silver in their purses, a bag for food or clothing, or change of garments, as those who must provide for themselves. And the burden of their methods were to declare: "The kingdom of heaven is at hand." And to prove it and show what that kingdom was, they were to heal the sick, cleanse the lepers, raise the dead and cast out devils. And no other means were provided to accomplish these results than prayer and faith. They were to obtain their food and all else needed either by gifts from the people or miraculous production. On a certain occasion his disciples were troubled, because they had not taken with them any bread. Jesus quieted their anxiety by saying: "Do ye not understand neither remember the five loaves of the five thousand and how many baskets ye took up? Neither the seven loaves of the four thousand, and how many baskets ye took up?" This was an assurance that miraculously they could and would produce all they needed.

A kingdom endowed by its king with miraculous powers, and its officials performing miraculous deeds, is nowhere found in Christendom or out of it, and never was. Such a kingdom somebody has described as set forth by Jesus of Nazareth. But by whom is not known. That the description as we have it is as Jesus gave it, unchanged by the first narrator or subsequent ones, one may believe or disbelieve. Jesus does not speak to us for himself. He left no writings. That he left the meaning of the words as they have come down to us in a language he did not speak, unchanged through copyists and trans-

lators and the handling of men who had views of their own to propagate and not simply to copy those of Jesus, and that he did the deeds as they are recorded for our passive acceptance, one is safer to deny than affirm, if he values the truth above falsehood. And if he affirms, he is put under consistent obligation to accept as true the miraculous tales of gentile antiquity. For the miraculous, theistic and spiritistic, was the universal philosophy of the unscientific ages, no more doubted than was the earth as being a flat quadrangle, had "four corners," and the sun as going around it. It is a monstrous prejudice to believe the miracles of Hebraism and Judaism, and deny those of the Greeks and Romans, as if the latter were not as able to determine the cause of phenomena as the descendants of Abraham, whose ancient distinction was that they made theologies and religions out of their dreams and visions, and their modern posterity are hated of all nations, and scattered among them all, and have become the depositaries of the gold of the world, the love of which their later theism rejected as the root of all evil, but the peoples who have accepted their later religion hail as the root of all good.

If Jesus has been correctly reported in his sayings, his kingdom would be as impossible in any heaven we know anything about, as it is in this world. This objective world or universe of matter and its motions and changes of its own working, however strenuously and absurdly it may be denied any real existence of itself, and affirmed to be created by the thought of it, can be neither fancied into a created existence nor out of eternal existence, nor brought to its conflagration by the figment of the second coming of him whose first coming and kingdom we are considering, can neither be persuaded nor coerced out of its courses and ways of producing forms and their functions, or into others, by prayer and faith.

The kingdom that Jesus articulated and was attempted to be realized by monks and nuns and ascetics,

under vows of poverty, celibacy, and obedience to a superior, the renunciation of what human nature craves, the maceration of the body by abstinence of what the body needs to sustain it, and by infliction of positive pain, in the belief that matter is essentially evil, and the indulgence of our bodies to the extent of health and vigor, is displeasing to God and damning to our souls, was the early and prevailing interpretation of Jesus. All this is unnatural, or supernatural, is chimerical and incongruous in the relation of its parts, incompetent in itself for its own needs, and holds conspicuously the elements of its own speedy extinction, and that of the race; a kingdom of poverty, beggary, ignorance and vagabondage. Such a kingdom flattered itself that it had a divine mission to regenerate the world by bringing it to its own type of degeneration. Such a kingdom is called The Kingdom of Heaven by Jesus, if he has not been misquoted. But it is not the kind of a kingdom that modern Christendom is setting up. And the kingdom it is setting up may be safely denied to be a copy of the original pattern. There is no reasonable doubt that all the negation and vain affirmations unproductive of good demanded by that pattern, are not the obvious meaning of much that is reported as the preaching of Jesus. "Some writers," says Hasting's Bible Dictionary, "impressed with the fact that Jesus constantly inveighed against the Pharisees and Sadducees, but never against the members of the third of the three great Jewish sects, who yet must have everywhere confronted him, have inferred that he and John the Baptist, were Essenes. The silence of the gospels about the Essenes, is certainly remarkable; and there are many striking traits in common between the Essenes and the earliest Christians."

Discussion 68. It is stated by Lecky, History of European Morals, Vol. II, page 108, that "The central conceptions of the monastic systems are the meritoriousness of complete abstinence from all sexual intercourse, and

of complete renunciation of the world. The first of these notions appeared in the very earliest period (of the church) in the respect attached to the condition of virginity, which was always regarded as sacred, and especially esteemed in the clergy, though for a long time it was not imposed as an obligation. The second was shown in the numerous efforts that were made to separate the Christian community as far as possible from the society in which it existed." The first of these notions finds its persuasion and illustration in the fabled unhuman conception of Jesus, strengthened by his own celibacy. And so intense was the esteem for virginity and disesteem and degrading the natural cause of child-bearing, it would seem reasonable if man duly appreciated his ignoble and debased condition that he should go out upon the dunghill and kick himself to death, or kill his mother for very shame of her. What nonsense the Christian Church has erected into dogma the belief of which is essential to salvation. "Whosoever desires to be saved, it is above all things necessary that he should hold the Catholic faith." *Athanasius.*

Virginity in both sexes became so exalted a tenet, and natural maternity and paternity so degrading, the question was mooted what could have been meant by the primitive injunction: "Be fruitful and multiply and replenish the earth," and whether the human kind had not better become extinct than to be continued under the debasing conditions of natural propagation. But the provision for its redemption by the wonderful incarnation of the Son of God, gave the divine sanction to the continuance of the race. "It was their favorite opinion," says Gibbon's Decline and Fall of the Roman Empire, Chapter XV, "that if Adam had preserved his obedience to the Creator, he would have lived forever in a state of virgin purity, and some harmless mode of vegetation might have peopled paradise with a race of innocent and immortal beings." The estimate of natural parentage

under the old Hebrew dispensation and under the new Jewish, came to be directly opposed by the implications of the divine generation of Jesus and the virginal conception of Mary. Zacharias and Elizabeth had grown old vainly praying for natural posterity. But nature was incompetent to this result untouched by the supernatural. And when at last their prayers were answered and they were permitted to anticipate the greater joy of realization, Elizabeth breaks forth into praise and thanksgiving: "Thus hath the Lord dealt with me to take away my reproach among men." Paul gives his testimony on the whole, adverse to marriage. It is better to marry than of that which, if they cannot conquer themselves without, marriage is the cure. He says touching marriage: "I would that all men were as I myself." And the Apocalypse gives the final estimate and value of male virginity which is condemnatory, by implication, of both parentage and femininity, with doubtful resurrection of the latter. Of the 144,000 redeemed from the earth, all are men which had not been defiled by women. And woman was not an original creation but was taken out of man with some modification imposed in her construction for temporary purposes; and there are no marriages in heaven, and all are to become like the angels; and we do not read of female angels; and the three persons of the Godhead are males. We read of the Sons of God, but I think not of the daughters of God. But we are told that the Sons of God took the daughters of men to be their wives. And their progeny became mighty men, men of renown.

The Gods made *man* in their image, after their likeness, not woman. She was called woman because she was taken out of man. The man is not of the woman, but the woman of the man. Woman was made for *man,* not for herself nor for the glory of God. The woman hater, Paul, forbade her to speak in the churches, and ordered her to have her head covered in token of her subjection to man.

And if she would learn anything let her ask her husband at home. Wonder is, the bareheaded sisters, speaking in churches, and some pastors of churches; realize how offensive this must be to God and the great apostle? Childbearing was a penal infliction for the first sin. And its sorrows and frequency were greatly multiplied and entailed on women to indicate the utter heinousness of the sin and the divine disappointment, after the pronouncement that all things were satisfactory as they came from the hands of the creator; so great indeed was the regret that it drew from the Lord the expression of repentance and heart grief that he had made man, that is, *woman*. For she it was that had brought sin into the world, and the realizing capacity and certainty of a sinning posterity. Adam, sexed or unsexed, was incompetent to the dire results. What promised a gracious good to Adam in his loneliness, proved his curse and that of untold millions. I do not recall any passage in the Bible that in any degree excuses the woman except what she said in her own defense: "The serpent beguiled me and I did eat." But the educated of her posterity may perhaps hold the inducement of being exempt from death, made wise as Gods, and to have their eyes open to know good and evil, as a good and sufficient reason for the disobedience. And what the serpent had promised, and not what God had threatened, was the result, is afterwards acknowledged by God. Some dubious amelioration of suffering in childbirth may be thought to be promised by Paul as a result of the Christ-dispensation, which was devised to restore what had been lost, and to make good what had been made bad, by the disobedience. "Notwithstanding she shall be saved in childbearing if they continue in the faith and charity and holiness with sobriety." Is childbearing less painful or fatal in Christian women than in non-Christian, other things the same? I do not think obstetricians have noticed any difference on that ground. The difference aside from an ample and

well formed pelvis, is in favor of women least removed from an outdoor, active, aboriginal life. Much depends upon the age of the mother. It has been observed by obstetricians of large experience that parturition in mothers from sixteen to twenty five is easier than those older.

All the sex-literature of the Bible is marred by ignorance of the anatomy and physiology of sex, as all it says about the heavens and the earth discovers the ignorance of the divine revelator of astronomy and geography. And this seems in conflict with the natural inference; he that made the heavens and the earth must surely know them, and if he reveal them must reveal as he knows them.

Metchnikoff, in his "The Nature of Man," in the several chapters of "Disharmonies," points out some concerning sex, as to its specific organs and their physiological functions, to the end of their uses. Sexual love often manifests itself long before its possible fruition, because its several elements are immature. Dante was in love with Beatrice at the age of nine. Canova was in love when he was a little more than six, and Lord Byron loved Mary Duff at the age of seven. Sexual emotion appears at an age when there is no question that the various elements that enter into its normal end and uses, which are procreation, are undeveloped and so impotent. This indicates the emphasis nature puts upon the continuance of the species and forwardness to effect it, and the little regard she has for the welfare of the individual. The end or reason of this passion does not accompany it as conscious cause of itself, or incite to its gratification. Nature's final and secondary causes are carried out to their effects without, and often against, the purposes of its intelligent instrumentalities. The furor of the sexual passion, and the instinct or intelligence by which it finds its counterpart or mate, in all bisexed animals, ensures the preservation of the races. Deeper than this passion, and below the threshold of its consciousness lie the apti-

tudes of the non-living towards life, and the tendencies towards becoming precede and generate the instruments of its realization. This is the defensible meaning of what is called "design in nature" and argues no intelligence in inanimate nature, or designer of, above, or other than, nature. Nature involves all cause and effect, and includes everything and everywhere. In the tendencies of nature, which are the results of its physical relations, we see the pattern of man's intelligent inventions, copying of nature's unintelligent prototype, essaying instrumentalities whose function shall realize that which has being only in imagination. This picturing precedes and generates the mechanism which is to functionate the ideal. Inanimate nature often fails to realize the complete adequateness of its mechanics for perfect effective function. And so does intelligence. In the old natural theologies, which were the religious conceptions of causative natural philosophy, written of course, by theologians, and written to show the mechanical skill of nature's creator, architect and artist, it would be blasphemy to see or narrate any defect in the architecture of the supreme divine builder. This wickedness was seldom or never perpetuated. The perfection of the construction of the eye and arm and hand to their uses were favorite topics. I quote from the Natural Theology of Rev. Henry Fergus: "Entered according to the Act of Congress, in the year 1835." After detailing the anatomical structure and the adaptation of part to part to the end of perfect physiological and visual uses, the author says: "The eye obviously appears to be an organ of most exquisite workmanship; it plainly demonstrates the existence of an intelligent first cause. I hesitate not to affirm that, although here were not another mark of design in the universe, yet the appearance of even a single eye would be an irrefragable evidence of a designing cause. Wherever I observe mutual adaptation, reciprocal dependence, the relation of parts to one another, and to a common end, there I believe has been

design. The belief is invariable, and it is correct. Experience proves it invariably true." This is the present Judaistic Christian natural theological aspect. But all final aspects of Christian theology are dogmatic, appertain to faith resting on the authority of assertion of remote Hebraic antiquity, and not on the experience or demonstration of present believers. "A dogma is a proposition; it stands for a notion or a thing." (Cardinal Newman) The majority of the most intelligent of mankind has not made the inference of a designing intelligence above or within nature from the complex adaptations of natural things to a common result. It is not a scientific, or of necessity, a logical inference, that all combinations of different parts to a common result were designed beforehand to this effect. It would warrant monstrous conclusions.

Discussion 69. Trichina Spiralis is a parasitic worm found in the intestines and muscular tissue of man as its host. These are adapted to the metamorphic changes in the life of the worm and the continuance of its species. Therefore it was the design of the creator of man and trichinae, that man should live that trichinae might. But they are detrimental to man's health and bring about his death. Nevertheless, to emphasize the divine intention and to make sure the continuance of trichinae, lest the foreseen methods of disposing of man's body after death by burning or burying, might defeat the divine intention, and bring about the extinction of trichinae, it appears that the most fitting, if not the only place for these parasites to be born and to pass the eventful stages of their lives, is in the intestines and muscles of animals; so they are found also in swine, cats, rats and other animals whose dead bodies are eaten uncooked by other animals in whose intestines the germs find the conditions for their development. Surely man as to the divine regard and provision for his continuance and well being, has no pre-eminence over trichinae, but is a means to the latter.

The basis of Christian theology is not inferential nor *a priori.* It is historically assertive of sensible evidence. The God of the Hebrews was visible and audible. The challenge to his existence and action was an appeal to individual and national sensible experience. The highest proof of Christian theology is this assertive experience. And the more modern enlargement of the sensible evidence of seeing and hearing the divine and creative existence, has been added that which is peculiarly Christian, the generation and birth, tangibility and manducation of a, or the, real creative God. And any departure from this experience to nature's facts or processes for an inferential evidence of the divine existence is the implied insufficiency of the sensible self-revealment. And so far Christian theology is neither Hebraic nor Christian. And the denial that any one hath seen God is the denial of an essential fact claimed by both the Hebraic and Christian theisms. No theology can maintain its pretensions against the bulwark of our absolute ignorance touching such existence, notwithstanding the Bible evidence of it, and the presentation of scientific verities opposed to its fundamental dogmas as objective facts. Hebraic and Christian theologies have not and never had any positive sensible proofs of what they claim, and this must be admitted or Christian monotheistic theology must suffer defeat by the equal proof of polytheistic theology. "Not proven by sense" is the legitimate allegation of reason against the Christian theology. And this may be said to be admitted, and even declared to be needless, by its orthodox advocates, by their insistence on the saving importance of *faith,* and this faith is not the result of proof of its propositions, but is the gracious gift of God. This is in evidence by the famous Protestant doctrine of "Justification by faith alone" and the summation, in the expression, "our faith;" by the infantile membership of the church, and the most complete of all the creeds I have seen, the Athanasian, which opens thus, as I have before

quoted: "Whosoever desires to be saved, before all things it is necessary that he hold the Catholic faith. Which faith, except every one do keep entire and inviolate, without doubt, he shall perish everlastingly." But how can it be known that the belief of any Christian theological teaching is the gift of God, and not such as accompanies any tale told a child, or many adults? The Bible says faith is the gift of God, therefore it is. The Bible says the ass spoke to Balaam, and the fish swallowed Jonah. And after being in the belly of the fish three days and three nights, and praying, the Lord spake to the fish, and it vomited out Jonah upon the dry land, and Jonah went down to Ninevah. Therefore these events occurred. These are the statements and such is the Christian belief. And it excites a wondering horror in the Christian devotee to be told by one that he does not believe the Bible. And an equal horror to the Christian to be told by one that he believes the Koran, the Book of Mormon, or the authoritative book of some other religion. The wonder is how one can be so ignorant and so led astray from common sense and reason. The popular standing of Christianity today rests not on the objective proofs of its dogmas, for these repose on such childish tales as have just been related, and on natural impossibilities, as the creation of matter, the infinite extension, omnipresence and omniscience of a personality, one human birth of a God; fundamental tenets of Christianity to-day, impossible of proof, but on the traditional and educational teaching that men are morally better for believing there is a creative and all dispensing and retributive God, than not so believing. This was substantially the attitude of his judges that condemned Socrates. And it may be freely acknowledged that such belief has a restraining influence on many, especially the young. But it is no proof of its objective truth. A special theistic and religious belief generates a prejudice in the adherent of greater intelligence and moral worthiness than

he is willing to concede to those of another religion, or to those who profess no specific religion. This is brought out in a remarkable and noble paper in The Independent of July 9, 1908, by J. H. DeForest, D. D., entitled, "The Moral Greatness of the People of Japan." He says: "The almost universal Nineteenth Century thought of Eastern peoples was that they are heathen, pagans, idolaters, immoral, brutal, superstitious, licentious and the term semi-civilized was really too good for them. This style of thinking still persists. An editor of a large Christian paper recently returned from Japan, and said several good things about the Japanese, but added, they are still a pagan nation. A clergyman of the English nobility, after seeing Japan and Korea, wrote to The London Times: "I am not for a moment blaming the Japanese soldiery, they have only the ideals of a heathen race." The religious bias makes some Christians cruelly unjust to a great moral-loving people. One need only ask, Is a nation pagan after adopting and being adapted to the very best fruits of modern civilization—civil and religious liberty, universal education, equality before the law and representative government? Can an army of over half a million carry on a campaign in a foreign land on a higher moral level than was ever attained by other armies, and still have only the ideals of a heathen race? The real facts are beginning to loom up before us. And new and glad voices are bearing witness to the wonderful moral and spiritual life in the nations of the East. Bishop Roots, in an address recently given in Boston, said: "It is difficult to take in the moral greatness of the people of China. They are the only people who have never deified vice, who have never placed unsavory stories of vice in their classics, who have never publicly sanctioned immorality. Their ideals have been scholarship, peace with the world, and righteousness. It is difficult to take in the moral greatness of the people of Japan. They are the only people who have an Imperial Line un-

broken from prehistoric ages, so revered and loved that against it the people have never risen in revolt. They are the only people whose passion for righteousness has exceeded their greed for gold, and whose love of honor was greater than their fear of death. It was the nation's moral character that made it natural to be kind to wounded Russians, and to treat their 72,000 prisoners with a degree of kindness that no Christian nation has yet attained. I was in the Japanese army for six weeks privileged by letters from the Premier, and so far as I saw and heard by careful inquiry, there never was an army so absolutely free from camp women, so free from drunkenness, from looting, from boasting over a conquered foe, and so kind to prisoners." The article is too long to be followed further in its details. Suffice it to say, that the author successfully shows the exceptional character of the Japanese against each of the four great vices everywhere met with in all peoples of the earth, and especially charged upon the Japanese by those who do not know: commercial immorality, sexual immorality; savage brutality; unsocial, spying natures. The author terminates his article: "It is difficult to take in the moral greatness of the Japanese, whose Imperial Line has never been broken; whose family life persists through centuries; whose heroes, men and women, show a spirit of sacrifice that is the very key to the highest moral life; and whose virtues are so virile that they appropriate within the narrow limits of one generation all the great liberties of modern civilization, and all the humanity embodied in the Red Cross Society." The author says he has lived thirty three years in Japan.

I have made this lengthy quotation to show from a non-Christian nation by a Christian author, whose long acquaintance with the Japanese by residing among them, observing their habits, speaking their language, and reading their literature, and thereby giving ground of authority to what he says, to the effect that all moral vir-

tues did not take their origin from Jesus of Nazareth, or the Hebrew race, nor are all practically embodied and illustrated by Christendom. It is difficult for the theistic and religious devotee whose view is that the universe has been brought into existence from non-existence, determined and arranged by intelligence in all its parts, with the most evident marks of design of complete relations of cause to perfect effects, by an Almighty, Omniscient and infinitely good, God, to see or allege any defect in what this being has done. And if such a being had really done what the devotee alleges, there would be no defect and no ground for its allegation. Writers on natural theology do not see nor are they expected to find any defects in nature in regard of means to ends. Or if they do, the devil has done it through the beguilement of Eve and consequent divine curse upon the world; mythical stories, unworthy of credence except of children. And this explanation of defects is evidence of the greatest possible defect in the adaptedness of means to the ends of goodness, in either the power or Omniscience of God to produce them. The intervention of a devil to thwart the purposes of a universal, Omniscient and Omnipotent Creator, is self-contradictory. The states, acts and effects of all intelligently purposed and created things must have their complete causes in their creator, if created, since nothing is, except the Creator, that is not dependent on the creator for what it is, or can become or effect. And underived liberty to become or to effect is a denial of this proposition. And the alleged existence and operations of a devil opposing his Creator argues against the universal creation, or Omniscience, or the Omnipotence, or Goodness of God. "The human eye," says the natural theist, "is an organ of the most exquisite workmanship; it is an irrefragable evidence of its designing cause, and demonstrates the existence of an intelligent first cause." If this be true what is to bar the necessity of the inference that the designer of the eye and of the universe

must have a designer and creator? For we cannot stop the legitimacy of the inference wherever we find or allege a design, and a stronger reason for it at every ascending repetition *ad infinitum*. Man cannot transcend himself the limits of his own capacity. There is nothing but human intelligence, will and action, by which from analogy, man can infer a creation of the world and universe, and the adaptation of means to ends therein. And these are inadequate. The Creator like man must follow the human model, or man's reasoning has no aptitude to determine results. If God would produce anything, there must be a concept formed in his mind—the final cause. Then a plan of means to effect the ideal and proposed in the concept. If a spider were to consider the subject of world-making, because it could not rise above its own capacity and methods, it must think God did spin the world out of his own body. And something like this appears to have been the conception of Sir William Hamilton, when he says that "a moment after the creation there was no more of existence in the universe and God together, than a moment before creation in God alone. God evolved the universe out of himself." Is not this incompatible with creation? If it be true, the world and universe should be as complete and perfect and harmonious in its parts and working as its creator. For how can a complete and perfect cause, involving its effects, produce an imperfect and discordant effect? But there is no analogy between what man can effect by his intelligence, will and action, and the absolute creation of matter. Or between what man can effect, understanding the *how* and the *why*, and the becoming of sensible properties and capacities not in their constituents, even the consciousness and act of this writing. The properties of combinations and associations of matter, are neither in nor belong to the constituents separated from their combinations or associations; except the weight, which is the

essential identifying feature of matter, arising from the universal relation expressed by gravitation.

Discussion 70. Man may put into topographical and other physical relations the constituents from which nature's forces may work wonderful results, as the dynamo electrical machine shows. And this appertains to the whole field of chemistry, and much of physics and other sciences. The combinations of matter in the human body to the productive effects of life and intelligence are the most amazing. But they are as evidently the proximate causes thereof, as the combinations of oxygen and hydrogen are of water, or of oxygen and sulphur in the production of sulphuric acid. And while man's intelligence recognizes the law or fact of the causal conditions and means, it has not yet penetrated into the *how* or *why* of the effects.

We know of no distinct entity of mind separate and apart from matter and its specific interrelations called organization. Every living animal organism has its purview of psychic awareness, rising to consciousness, self-consciousness, and extensive degrees of intelligence in accordance with its physical complexity of structure, and extent of cultivated functional experience of that portion of the organism that makes for intelligence. All properties, qualities, capacities and differences, so far as known by the present advance of science, originate in physical difference of positional interrelations and numbers of one substantive matter and its motions. Some have found the prognostics of intelligence in polarity, in chemical and other affinities in the groupings of molecules, in crystallization, and more distinctly, in the sensitive plant. The name of this common ancestor has been christened *sensitivity*. We retreat further and further through the phenomena of forms, their functions and properties, and differences of all kinds, and come upon wider and wider enfolding generalizations, until we reach one undifferentiated and all enfolding eternal form

of matter, in infinite numbers in motions as mode of existing, and space and time as conditions. These are the limits of our regression and our ultimate findings. All else comes from these primals and by synthesis is returnable into them. The reason and the how must be sought for and found, so far as they shall be found, in these ultimate and necessary premises. And so far as found they have been found in the mechanics of the material units considered in their numbers, their interrelated positions and their physical environment. And the universal and inevitable conditions and limitations, the verities or laws, space and time, insure order everywhere and always, so that failure of order is as impossible as failure of space and time.

We do not find mind to be an added substantive entity, from which cause, matter, space and time become and cease, while mind remains intact. But we discover exactly the contrary. That mind is an individualized appearance, as unsubstantial and dependent on states and conditions of matter as the rainbow. Consciousness by introspection and by objective investigation thus far has failed to find an involved end, subject, self or ego, which is conscious, and may be considered separate and apart from consciousness (though the world is full of assertions to the contrary and great institutions are founded on the contrary assumption) except the living matter of the body. And when the body is dead the mind or consciousness disappears. I say this from the present view point of verifiable science. I know the objections from idealism and from spiritualism, but do not propose to consider them here. They have been touched upon in parts of this essay. "The schools have of late," says Boyle, cited in Century Dictionary, "much amused the world with a way they have got to referring all natural effects to certain entities which they call real, and attribute to them a nature distinct from the matter they belong to, and in some cases separate from all matter

whatsoever.'' The scientific acceptance of laws and properties, says G. H. Lewes, is justifiable because of their objective validity, i. e., their agreement with sensible experience. But a substantive entity of mind is an unfounded notion, because it has no verifiable objective validity, and no agreement with sensible experience.

And inasmuch as our intellectual nature necessitates the primal postulate of eternal uncreated existence, and this negatives any psychic demand for absolute creation, creation is as needless as it is impossible and inconceivable. Matter shows no signs of having begun to exist or capacity for ceasing to exist. But on the contrary having existed for incalculable eons and discovering no indications of waste, or wear, or weariness of action, the inference is legitimate, in connection with the inevitable primal postulate that, if there be existence, there must be eternal existence. And knowing no other existence that can be eternal, matter must be the eternal existence postulated. Matter existing without beginning is the contradictory of matter not existing without beginning, and is of necessity the scientific and philosophic primal assumption. For neither science nor philosophy can ground on professed ignorance without partaking of that essential feature, nor on the assumption of creation or creator of existence, for these assumptions are not necessary nor provable, reasonable nor conceivable. If there be any changes or becomings in any respect or degree, these must be involved as possibilities in the nature and circumstances of matter. No changes can take place in matter or becomings issue from it without motion of matter. No motion except in the orders of space and time, from which there can be no deviation. Hence, mechanical and mathematically measurable and numerable. Matter is everywhere and always found to be in motion, and the system of the universe as now understood requires it. Therefore motion is the eternal mode of existing of matter. The motions and interrelated positions of matter be-

ing of necessity in the orders of space and time, all evolved phenomena and mechanical and orderly. Motion of matter is force. Without motion or tendency to motion of matter, there is no force. Our primal postulate involves the universe, the comprehensive *all.*

Discussion 71. Life is a possibility of matter and matter has actually become living in some special interrelations of positions and motions with itself, under a definite environment. Where these are present matter is alive with as much consequential certainty as where there are other specific interrelations of matter and motions with itself under some definite environment, the matter involved is acid, is aqueous, is diamond, is a watch, is a tree, is a man, or what-not, as the case may be, with properties, capacities and functions, as new factors, which were not in the antecedent premises. How are these new factors to be accounted for? Most evidently in the structure. If the present scientific analysis of matter reducing it to one form and one nature, to common susceptibilities and capacities, be accepted or rather be true, there seems but one inference to be legitimate, that all differences of objective and subjective, and all differences that come under each of these denominations are found in the synthetic mechanics of the units of matter, their related positions to one another in space, and their space and time relations of motions. Definite properties, capacities and functions belong to, inhere in, definite structural relations. This need not surprise us as a universal proposition, since it is found to be true in all inductions of experience without exception. The mechanical structure of matter "is pregnant with the meaning of the universe."

The way the primary units of matter or corpuscles, the latest findings of physical science, are built up results in atoms, the building of these in molecules. of these in masses, and organized structures. The universal mode of existing of matter in motions and not quiescence

makes all changes possible, even certain. The two contrasted states of matter and its two contrasted processional phenomena, are inanimate and animate, inorganic and organic, not living and living from the same identical corpuscular matter, differing only in numerical units and their mechanical combinations. There is no mind where there is not life, and no life where there is not a complexus of bodily internal relations called organic, definitely adjusted to external relations. Chemical union more intimately and intensely involves its constituents than simpler physical structures, obliterates their specific properties and originates new properties that inhere in and belong to, the new synthesis of the same constituents. Properties are native characters of form, quantity or mass, number and construction, and movements of matter. And while all differences between the not living and the living, and all other, must be referred to the one matter existing in motion under the universal conditions and orders of space and time, all life may be referred to the chemical union of a few differentiated atoms of one matter. Protoplasm is the one living structure of both vegetal and animal beings. Life, then, is the property of essentially one chemical structure of one not living matter. Prof. Loeb says: "We are to remember that all life phenomena are ultimately due to motions or changes in colloidal substance," and protoplasm is the colloidal substance to which all life phenomena are due. Matter then, in special and highly complex mechanical positional and moving relations with itself, and a definite environment is living, and living because of these relations. These relations are causal antecedents of all the mental or physical range of phenomena from bare awareness in some respects of a bit of protoplasm to the most acute and exalted sense perceptions and intellectual apprehensive and comprehensive intuitive and inferential and reasoned conclusions. Metaphysics are grounded in the physical

conditions of matter. And as the constituents of protoplasm are essentially the same, we are left to conclude that not only all the difference between the two kingdoms of animate nature, but all the difference in the grades of animal and human life phenomena to the most pronounced, varied and extended psychic life depend upon and are the issue of corresponding differentiations in the protoplasmic constructions and operations. To these material and chemical data life is seen to belong as property or character. Of this life or living matter there is the science of biology, and its specialized mental department called psychology, may be studied without much reference to its origin in the physics of matter, as the universal property of motion of matter or force, and called dynamics, may be studied almost apart from consideration of matter. "Organization and biotical functions arise," says Dr. W. B. Carpenter, author of Carpenter's Physiology, "from the natural operation of forces inherent in elemental matter."

And all chemical unions including the bioplasmic that appears to have in it the native property of life and all its possibilities of thought and feeling, cannot be conceived other than the more intricate and intimate blending of attenuated portions of matter in a maze of orderly self-related vibratory motions, akin to the simpler, juxtaposed physical unions. And yet how great is the difference between the simple and the complex structural results. Mind is nothing apart from a living material organism. Man is a product of nature. He is cosmic as well as the mountains; yes, more. They register their being from a vast force that has lifted them from the depths miles toward the heavens. He is a hierarchy drawn from the mountains, the atmosphere, the ocean, all climes, the stars, the ages past and grapples with all problems. The advancing complexity of the organism measures the advance of mentality from the simple awareness of the moner to the objective and self-con-

sciousness and inferential reasoning of man. Man is his own standard from which he interprets all mentality and volitional action below himself. He does not know that life ranges above as well as below himself, but he strongly suspects that it does. And while he has no scientific or analogical ground to hold that, if it does, it can be disassociated from organized matter. But before he became scientific in his experience or thinking, or capable of intellectual reasoning, and before he had any knowledge of matter and its relations to mind and intelligence, and had no reason to believe that one thing might not be as well as another, he came to believe that human life is something in and of itself, substantial and enduring, and owed no dependence on matter. And this notion has by continuous teaching descended to our own time. And today, human life at least, is considered by a class of teachers not as living matter, become so as a cosmic evolution as all present forms and properties of matter are from atoms to suns inclusive, and from the non-consciousness of matter to its highest intellectuality, but as a living substantive immaterial entity, in the absence of any knowledge of a substantive immaterial entity. And if there is, there is no knowledge that it is living, or can do anything, or is essentially independent of matter. And if man attempts to ascend and devise living beings above himself, he must construct them after the pattern of himself, put mind, and will, and deed, into forms like his own, he calls them immaterial without knowing what immaterial is, or that it is, except it be the property or function of the material, labels his constructions infinite in power, names them Gods, anthropomorphic divinities! There they are as real and substantial as imagination and words can make them. "There are exterminating angels, that fly wrapt up in the curtain of immateriality and an uncommunicating nature." *Jer. Taylor.*

Sensitivity, and intrinsic and essential and universal

recognition, so to call it, of matter by matter, would appear to be the native ground of all that becomes particularized and emphasized by increasing complications of matter with itself. Universal gravitation, or the inherent tendency of matter to associate or mass itself, apparently has no other conditions than quantity already massed and space distance between masses, and these are necessary states of matter in its mode of existing in motion. The selections of chemistry, of photography, electricity, magnetism, of polarity, crystallography, and the nutritive selections of cells, tissues and organs of living matter, involve the essential nature of matter not living and living, and absorption and assimilation of proper food amidst improper and inadmissable materials as do the one celled microscopic infusoria, "that millions of them collected into a mass would not equal in bulk a grain of sand, and 187 millions would be required to weigh a single grain. And a single thread of a spider's web is found to be composed of six thousand filaments." The germ cells of animals including the human, and the seeds of plants partake of the nutritive materials common to other cells of the body, but so arrange the particles of the food as to give the distinctive genetic properties and qualities to these cells which others do not possess. And when the female cell or egg is fertilized by being penetrated by the male cell or spermatozoon, the new individual takes its origin, and starts off a constructive activity in placing matter in space relations with matter, obeying the joint but proportioned impulse of either parent so as to realize a new being like the parental, yet different. "So that the ultimate problem of sex, fertilization, inheritance and development, are cell-problems." *The Cell in Development and Inheritance.* Is this constructive talent, so to call it, to be ascribed to teleological proposeful intelligence in the active material agencies at work, or in a remote or present agent, but other than cosmic? Magnetic discrimi-

nation and crystal placing are as precise and tend to an end, or completed satisfaction, as are vital selections. Must not these exquisite discriminations and activities directed unerringly to an end, from physics and chemistry; from universal gravitation; the selective activity of the magnet; from a single cell organism to millions of them incorporated in a body, each acting an independent part which jointly eventuate in an elephant, a boaconstrictor, a man; and a mental resultant, some part of which, some cell, feels itself to have produced, or all the cells together feel themselves to have produced—we have no more reason to believe than that mentality determines water to run down its bed stream rather than up. From the point of view of exactness of deed and certainty of effect, the action of the living cells compared to which human intelligence and its working from final cause and definite purposive intent, would be at fault, both in plan and execution; indicate some cosmic principle which is not intelligence acting from final cause and definite plan, devised means and execution from intention, which is blundering expertness of intelligence and volitional indirectness of action and miscarriage of result. In thinking, there arises a search for something more definite and satisfactory than is in the thought; or to render the thought more distinct than it is; or to determine whether the thought is compatible as truth with the thoughts already established as true to nature. The cosmic principle appears to be not intelligence, not purposive, not a definite end in view, not intent to realize a view by action. All this is human blundering. We see nothing of the methods of incompetent intelligence and action in nature's physics or chemistry, or building of worlds or organisms. Nature's operations without intelligence, purpose or intent are effected of necessity by the laws and activities of material relations. It is the function of some of her organisms consciously, intelligently, to realize, contemplate, study and imitate, where

action to a very limited extent is volitional corresponding to conscious preception. But the unconscious cosmic principle must include the conscious human, as the nonliving includes the possibility, nay, the certainty, of the living, since life has occurred; as the verities of space and time include and are the orders of existence and activities of matter and all its becomings. Cosmic recognition appears to be a property inherent in material relationality as matter must assume space and time relations in its mode of existing in motions.

A distinguished writer says, that he knows no reason in the nature of things, why all should not come to an end this instant, as he is unable to discover any assurance of stability in nature itself. Yes, true, if he believes nature or the material space and time universe to have been created and ever has been and continues at the arbitrary will of its creator, as its creation was at his arbitrary will; enhanced by the strong presumption that what begins to be will cease to be. But neither its creation nor creator does he know, nor can conceive, nor does any true and verifiable science of nature legitimately lead him to infer, nor from any necessity need he affirm, the creation of the universe. He has been taught the words "creation of the universe," by instructors as ignorant of such an event as himself, and he repeats the same to his pupils. Taught by barbarian ancestors who, like our children, neither saw nor felt any impossibility or improbability of absolute creation, and supposed the sentence "God created the world," was sufficient evidence of the act and the agent. And this is all the proof the subject is susceptible of. And of the sufficiency of this proof there has been a striking realization from children in the Sunday Schools to presidents and professors in universities. Of one hundred adult persons met on the street and asked the question, probably not five would express any doubt of the matter. And they would prob-

ably question back: "Where then did it come from; it must have had a beginning some time?"

Discussion 72. But if he holds the material space and time universe to be eternal and therefore uncreated, as some existence must be if anything exists; and nothing can be posited out of and beyond, or other than the universe, which the universe is known not to contain, include, or comprehend, then he cannot avoid the conclusion of the everlasting stability of the matter and force and phenomena of the universe. Since whatever exists without beginning to exist, must continue and cannot cease to exist. But his own continuance as a thinking, feeling and acting personality, as he, as such, had a beginning, cannot be insured a moment's stability. And nature's operations and becoming and dissolutions are orderly and must be, for they cannot transcend the orders of space and time and cannot be made to. The universe must be conceived as observation, scientific and phlosophic reasoning declare it to be, one evolving, dissolving, systematic whole, infinite in extent and content. It must be systematized, for it cannot get out of the orders of space and time, or the relativity of its own parts. And neither beginning nor termination of its existence, nor more or less, or other than there is and ever has been, can we say there is place or time for, or order of becoming or ceasing to be. All substantive existence is ever changing in form, property and function, as mode of existing. So that one atom more of created matter could no more be added and find place and use, than space for it to exist and act in, and time for its action could be created. To a completed watch, were there nor could there be but one watch, as there is nor can there be but one material space and time universe, one more screw or wheel could find neither place nor use. And these could only be found by the wreckage of the watch, and another watch after a different plan and system of parts constructed. So if a new atom of matter were

brought into existence from non-existence, there would be neither place nor use for it in the universe. And it could find place and use only in a new adjustment which would derange the present order of things from universal gravitation to our individual personality, if it did not necessitate an antecedent creation of space and time.

That properties and functions originate in, or are caused by, or of necessity accompany, definite forms, internal constructions, and even mere quantity or aggregations of matter, while the same properties and functions do not belong in any degree to the separated parts, or to small quantity, is well set forth by Sir Oliver Lodge, in his "Life and Matter." "There is no necessary justification," he says, "for assuming that a phenomenon exhibited by the aggregate of particles, must be possessed by the ingredients of which it is composed; on the contrary, wholly new properties may make their appearance simply from aggregation. The aphorism sometimes encountered, that whatever properties appertain to a whole must essentially belong to the parts of which it is composed, is a fallacy. A property can belong to an aggregation of atoms which no atom possesses in the slightest degree. Those who think different are unacquainted with mathematical laws; they are not experienced in critical values, above which certain conditions obtain, while below them there is suddenly nothing. A meteoric stone may seem to differ from a planet only in size, but the difference in size involves also many other differences, notably the fact that the larger body can attract and hold to itself an atmosphere—a circumstance of the utmost importance to the existence of life on its surface. In order that a planet may by gravitative attraction control the roving atoms of gas, and confine their excursions to within a certain range of itself, it must have a considerable mass. The earth is big enough to do it; the moon is not. By simply piling atoms or stones together into a mighty mass there comes a critical point at which an atmosphere becomes

possible; and directly an atmosphere may spring into existence, which without it were quite impossible." Here is a general recognition that matter in motions in space and time relations, are causal of eventuating phenomena. I take it that science is now sufficiently advanced to warrant the conclusion that the new solar system of matter was in such a state of diffusion by extreme heat, that no systems as celestial and terrestrial physics existed, but only matter in motions, and universal gravitation; no chemical affinities took effect; probably no atoms of matter were formed; but matter in its corpuscular or electronic minuteness, simplicity and nakedness, if this is the ultimate and no further analysis is possible because there is no further analysis of matter; but certainly no life was possible. But within this revolving, seething mass, and its conditions and orders of existing and changing, space and time, lay all the possibilities and certainties of what has followed. All the distinctions of sun and planets, system within system, atoms, molecules, affinities; differences of forms, properties, functions, including life and all its manifestations in material shapes and degrees of awareness to distinct senses, intellection, consciousness, inference, reasoning; life that is nearest to the nonliving to that most remote from it, in fullness, exactness and certainty; life protistic, vegetal, human, parental, social, ethical, religious, governmental,—all have arisen, been evolved from, naked matter in a state of motion, subject to the orders of space and time, and any influence or matter living or not living that might have come into this solar space from the universe of matter in motions beyond. And this seems not improbable, as the universe is one interrelated whole, giving and receiving. And especially, if the sun with his attendant worlds and scattered meteoric matter that obey his gravitative power, is voyaging round a center that commands the sun's obedience and his retinue, as all within the solar space obeys the sun. While this infinite natural source of antecedent

causatives for what was to follow and is seen to have followed, at his hand for particulars, it seems surprising that men should feel the need to assume a supernatural to intervene at some points of what has followed, and for the existence of matter in motions. For a supernatural there is no place or use in the natural, nor place or time beyond, for there is no beyond, and these verities are natural and cannot be excluded from, nor extended beyond, the universe. And more surprising that men should persuade themselves that they are actually aware of a supernatural, when for it to be true as coming within the certainties of human cognition, it can only be by way of discriminating exclusion from nature. They must know the natural in all its actualities and possibilities, in all its space and time extent, and know something besides, and know that it is no part of nature or the universe. It will not do to say that the supernatural has, of itself, come within human cognition, for this would be its assumption, but no proof of it. And the supernatural being thus known by distinguishing it from all the possible natural, a further knowledge is needful, to determine between a supernatural agent and what stands for its product, and to know that the identified supernatural was able to, and did produce that which is found amidst nature and is not natural. But from an absolutely unknown the allegation of a word (there is no real existence and deed known to correspond to it) to account for nature or the universe, or for something alleged to be in nature, that is not of nature, but is supernatural, nothing can be gotten out of such assumption but what is first gratuitously put into it. And if creation of the universe is gotten out of the word creator, God or Deity, it can only be because it was first put into these words.

And there never was an experience, or a conviction that the fact itself of creation induced, nor is creation of the universe a necessary and inevitable truth; and the

coinage of a word was sought to express it. But experience asserts, and legitimate inference therefrom declares, that the universe of real existence of indefinite extent now exists. And the necessity of thought affirms that, if there is real existence existing, it must ever have existed, because no real existence can begin to exist without cause for beginning to exist, and no real existence can be its own cause for beginning to exist. Therefore there must be real eternal and uncreated existence existing. Then the affirmation of the creation of real existence is a gratuitous assumption, and contradicts a necessary and inevitable assumption of eternal and uncreated existence. And there is no existence known not to be comprehended in the universe, that is, in eternal existence and what is evolved from it.

A scientific and reasoned philosophy neither knows nor of necessity postulates a beginning. It grounds on self-evident truths; sensuous and intellectual; on positive, enduring, substantive existence. Absolute creation of substantive existence can have no place in knowledge. It is not found in, nor can it be imported into scientific philosophizing. A beginning implies a termination of that in respect to which there was a beginning. Existence without beginning, which of necessity must be granted, implies continuance without termination. All origins have their source and efficient reasons in what had no origin. The eternity of the heavens and the substance of the earth, not the creation of the heaven and the earth, is the true aphorism.

It is surprising what a prestige superstitious regard for the sayings of remote undeveloped antiquity has had and now exercises over educated men, that they are still satisfied with "fiat creation," as an actual event, or a reasonable explanation of what is problematical, as if they saw clearly and with certainty, the realness, the *how*, the material universe from non-existence sprang into being at the command—"come forth," or "Let the

worlds exist." But all the creative power put into the command is but the echo of human voices. And the putter-forth of such prolific command that when, and where, and before anything was, space and time, and infinite worlds pregnant with all laws, actualities and possibilities, at once became. This is but the same childish credulity whose echo we repeat and the reverberation goes on sounding down the ages the same theistic fanaticism taken as literal objective fact. And most surprising that educated men, desiring to discover, not to invent, answers to their questions, should hold mind to be in, and of itself, a knowing entity, but know not mind as such a something that is united to, but may be detached and separated from matter, without its destruction or even damage to its capacity of knowing; of which entity however, no one has ever had a sense cognition, or any other that could be verified. It is called spirit. But this when first used meant breath, air, a real, that had an objective existence and could be verified. But the technic which it came to stand for is not an objective real, nor strict-subjective. For if consciousness or what is subjective, is a state of a mind-entity, it may well be denied that we are conscious of the subject, as the objective entity of our consciousness. The meaning of objective thinking thing, or thing which thinks is different from thinking, and has first to be put into the word mind before it could be gotten out of it. The thing was not first discovered and the tag *mind* put upon it as its name, as breath, air, wind, was discovered as real and tagged spirit. What I have expressed is in conflict with what I am about to quote from high authority. But any one can introspect his consciousness and determine for himself, if he is conscious of any *thing* not his body and not material, which is conscious and thinks and feels. "The idea I have of the human mind, in so far as it is a thinking thing," says Descartes, "is incomparably more distinct than of any corporeal object." "Mind," says Sir William Hamilton,

"is the subject of which consciousness is the general phenomenon. Consciousness is to mind what extension is to matter."

Here mind is a thing that thinks, is conscious, but is not material. And of which Descartes says he has a mental image clearer than his vision and touch of matter. He claims for his idea, not a recalled form from memory of a sense object, but by implication either a clairvoyant vision, or an image of the constructive imagination. I shall take his meaning to be the latter. It is a pity he has not told us how he identified his idea as being the "thinking being," or its truer image of it than his vision of matter, or its remembered impression upon his senses. And Hamilton makes mind as much a thing in and of itself, a positive objective existence whose property of being conscious is as essential to its existence as the property of extension is to the existence of matter. Matter cannot lose this property or have it suspended or held in abeyance, and have it restored again. Is the thing which thinks, is consciousness an essential property of it, and could not exist if it did not think, or was there conscious thinking when under the influence of anesthetics, or while a portion of the skull is pressing upon the brain? How can it be proven that there is consciousness in the denial of the patient?

Discussion 73. This thinking thing is declared to be not material. How is it so intelligently determined in the absence of any knowledge of what exactly it is? For immaterial, one of its names signifies that it is not material, but gives no hint of what it is. And spirit has too large a catalogue of meanings, to take a definite technic or philosophic meaning, from wind and the breath of men and animals, to the haughtiness of a lord, and the poor in spirit of the religious devotee; from life in general to the spirit of hartshorn, and hundreds of medicinal, pharmaceutical and commercial designations; familiar spirits. Spirits Act, an English Statute, the Spirit of God

and the Holy Spirit, the third person of the Trinity. None of these designations except for air and for what may be seen and touched, and life, and for quality of sensuous living beings, signify any objective thing or person that is known distinctly and certainly to exist. Spirit, as the subject of human consciousness and of theistic and religious nomenclature, if it signify any thing more, is but an indefinite and confused idea or mental picture constructed by the imagination, perhaps never two alike by different persons, or twice alike at different times by the same person, and never a true picture of any known objective existence. For such existence has never entered the senses. We may safely and sanely say, that life, mind, soul, ego, self, or spirit, is not known to be not material, or not materialistic as effect or cause. It may be distinguished from matter, and each of these terms somewhat from the other in a critical psychology, but neither of these words is known to express a real objective entity existing separated and apart from matter. Time-keeping by a watch may be denied to be matter, but not that it is material; for it is the function of a definite arrangement of portions of matter, some of which are in motion. So electric and heat forces may be distinguished from matter, and their laws of operation dealt with almost to the neglect of any consideration of matter, but they have no entitive existence apart from matter, and are held as motions of matter, and hence are material phenomena. And all evidence that bears decisively on the question of what mind or consciousness is in our present state of information, proclaims it to be a property or function of a very local complex arrangement of particles of matter in motions. This view harmonizes with all else known of nature. And all talk of a supernatural is mere logomachy or an attempt to endow words with power to create substantive existence and locate it outside of nature ,and settle upon the suppositious existence power to create the universe. This is the

commanding view of Christendom so far as there is any fixed view of the lower and middle classes. But many have no fixed persuasion on the point. But they suppose a creation of matter, and see no serious difficulty in creation, since they make a word to stand for a sufficient cause, and think no further, and hold there must have been a beginning. A beginning and a beginner is at the bottom of all the error I am contending against. It is impossible to get out of or beyond nature or find its beginning or beginner.

Mind, thinking, consciousness, personality, can present no evidence of greater extent than life, nor life than living matter, nor living matter than is organized into a local complex of definitely related positions and notions. And this relation dissolved and life is not. Is thought and thinking thing preserved intact after death?

A portion of living germinal matter is detached from the body of either parent, and joined together in the body of the mother. And this inseparable unity is the origin of a new individual, beginning as a parasite, taking form and growth and parental likeness in the body of the mother at the expense of her food and blood. And is constructed and endowed while a parasite with initiative becoming physical, mental and moral capacity, character and tendencies, transmitted in and inherited from these two microscopic bits of parental germinal matter, which was once but the common dead food the parents ate. All this concerns matter and material processes, and does not differ in principle from bi-sexual mammalian propagation of the lower animals. All the substance known to be involved, or need be affirmed, or can be proven or render us any information if affirmed, is the common matter of our food. And all we know about the origin of any individual, mind or body, from slave to monarch, from idiot to philosopher, must be told about two microscopic mites of matter separated from two parental differently sexed bodies and placed under

very peculiar physical conditions for a few months, and a babe is born, a little copy of dam and sire. And all we know of its final destiny whether as babe or man is its death. And all else is guess, hope or despair. And this is true notwithstanding all theistic preaching, religious creeds, churches, theological institutions, and missionary societies. And the origin, becoming and career and death of man, is all as natural as that of any animal or vegetable, or that the river runs down stream, or the balloon ascends. How great and how different natural results from insignificant and unlike beginnings.

Love expresses relationship, a tendency towards. And I think it may be maintained with a good deal of reason, that sex-love is the beginning of all animal and human fellow feeling. And it may be thought to find its antetype and prophecy in matter itself, as manifested in universal gravitation, specialized in chemistry, the magnet, electrical and other affinities. And this tendency satisfied, its intense rejection is manifested in the law of repulsion. Action and reaction must be equal and opposite. And all life, its properties and becomings are derived from lifeless matter. The female egg and the male spermatozoon are microscopic cells as differently and surely sexed, as is the individual which these become. The male cell, having the power of self-motion and specific discrimination, seeks, finds and interpenetrates the female cell, in the uterus, fallopian tube, or ovary. And a new individual mind and body, takes its origin. Hence, a man is nine months older than he is registered, for he begins to be at the moment of conjunction of egg and sperm. Love's union of opposite sexed cells is the root from which springs desire for marriage, parental and filial love, family endearments, tribal and national preference, social satisfaction, and the ethical sense. And of this latter sentiment there is at this time more evidently than ever before, a growing tendency towards universal human brotherhood, notwithstanding the great

increase of navies and inventions of more and more awful instruments of human slaughter.

But even human brotherhood is too narrow. Our kinship evidently extends to all sentient nature, and our ethical sense and practice should be as extensive; even to all that may feel pain by our acts should we act, or relief or sense of well being that is natural to them by our acts, where we ought to act. "Detested sport that owes its pleasure to another's pain." *Cowper.* The wanton cruelty to domestic animal life, and by it wrong to our own better nature in feeling and seeking pleasure in killing birds for the theft of their plumage to decorate, or in the killing of animals for their furred skins to warm bodies that hold debauched consciences, or capture for confinement for our idle diversion, wild and free animal life, is, and ought to be felt, to belong to the same class of damnable sins as war for the robbery of territory. This is against equals, at least in kind, and sometimes has proved to be against superiors in the game of war. And those who first went forth to kill are killed, and their purpose defeated, which is but just.

Discussion 74. Man is the greatest, most accomplished and most successful of all beasts of prey, and the only animal that prays—at least in vocal language. Notice that the cries and conduct of the higher living things in their human made afflictions, show that they love life as we do, and in their way cherish and defend it, and our vision of their distress and wounds, and their mourning for their young, seized and killed perhaps in their very presence, show not the least fellow-feeling in their behalf, or thought that man could do wrong to a dumb and defenseless animal. But this is not the full measure of his conscienceless barbarism, he breeds animals to appropriate their bodies and their young for his own feast, or to fatten his bank-account and pile up millions. Nor has the so-called civilized world awakened to the pitiless savagery of this gainful blood-guilty calling, except it be

the "heathen atheistic Buddhist," who neither breeds, nor kills, nor eats his more distant kin. But more amazing. Although man is the only animal that prays in articulate sounds, cries of agony and sight of wounds should be a more prevailing prayer than words. But it moves not the butcher to relent, as human prayer does not a defender in the skies. And man is so much a beast of prey that he breeds the human kind and begets children and sells his own offspring into slavery to increase his wealth. This is the limit of possible human inhuman degradation and savagery. Or if there be a lower still, it has found no record. But for the slaughter of animal life, man claims the gift of divine right as kings do to rule. It is the sort of right that human might makes. And when the animal proves to be the stronger and is the killer and the eater, the divine right is with the animal, for the skies are as silent in the one case as in the other. Some of the most convincing arguments against the validity of the assumption of a *fatherly* creator of life, are the inevitableness of its pains, its diseases, accidents, birth deformities and disabilities of body, feebleness or idiotcy of mind; the importance put upon the preservation of the species, by the fatherly creator, and his disregard and abandonment to almost universal antagonism the individual, the human equally with the lowest animals; and the fact that many animals live and are by their nature adapted to live only on the bodies or in the bodies of other living things; and the final destiny of every living being after loving life so well is death and extinction, to the highest beings as well as the lowest, so far as any proof appears to the contrary, with historic humanity essaying the problem. All rectification, amelioration and easement of life's defects, diseases, burdens and miscarriages, human and animal must be remedied and supplied, if at all, by human sympathy and human aid. And no divine objective fatherly interference can be expected or be critically shown ever to have occurred, either in be-

stowing life or ministering to it, by such proof as its directness, strength and universality commands faith in, and not the weakness of a verbal authority that begs the favor of, and makes the chief element of virtue to exercise, the luck of which is damnatory. The statements of remote antiquity before man had sufficiently developed to distinguish between the subjective and objective, and to know what tested objective proof means, without which concerning all outward things and events, past, present, or to come, what a man merely thinks or believes are valueless as proof to another. And this is the source of Christian dogmatic faith, on which rests its theoretic ethics and its hopes. Theism and theistic religions are wholly subjective, emotional and assertive, and as impossible of objective verification as were the Gods of ancient Greece and Rome. But a present people are as confident that what they think and believe concerning their Gods is as true, and their emotions and their faith as divinely given, as those ancient peoples concerning their Gods, their faith and consolations. They all rest upon one common ground, alleged miracle and faith in the truth of the allegation. But miracle has ceased, and the search-light of modern science can discover no objective evidence that it ever existed, or any Gods but home-made ones. For verifiable science and necessary affirmation neither postulate Gods to begin with, nor call in their existence as proof of anything that is.

The non-production on the part of a creator, or the prevention on the part of an Almighty, of life's antagonisms, would be a much more convincing evidence of a divine *fatherly* creation and care than the failure of cure; and prevention and cure must be equally available to infinite resources, of what should not be created and might be, as could be created and should be. But there is a sad manifestation that what should not be done has been, and what might be prevented is not, from theistic fatherly pretentions of infinite power.

The allegation that the world was the best that infinite power, wisdom and goodness could produce, may be true from the view point of its being produced or created. But the evident fact of the whole animal and feeling part of it is far from being in a complete, self-satisfied and lasting physical and moral state of well-being, shows that infinite power and infinite wisdom were unable, or infinite goodness was unwilling to create life unencumbered with antagonisms without and within itself; or they have occurred by accident and without the will and consent of the creator; or with his will and purpose that they should occur, planned and executed for his glory. Each of these suppositions is incompatible with the allegation. And the last, which appears to be nearly the orthodox Christian view, provokes the wonder of how a *fatherly good* creator could feel himself worthy of being glorified; and especially if the glory would not be cancelled if enforced by threats of eternal punishment, by beings beset by antagonisms within their own natures and without, which finally destroy all loved objects and life itself that loves.

Every form of life is at times antagonized by changes in inanimate nature called acts of providence, as earthquakes, volcanic eruptions, tidal waves, floods, famine, etc., and by living nature against living nature. Notice the carnivorous adaptedness by internal nature and external means of many animals to capture, kill and eat other animals, the human to prey, and in turn to be preyed upon; the annoyance and even death of the highest order of life to minister by its life and well-being to the continuance and well being of the most insignificant life adapted by its nature and means to enter upon or within human bodies and to live nowhere else, with as effectual care of the divine father that their species shall be preserved as that the human shall be, even to the suffering and death of the human, whom we are divinely told that God created in his own likeness and made to

partake of his own nature by giving to the dead body which he had formed by dead earth, life, by breathing into his own life. Besides there is in the nature of every human being an element that at times is at war with other elements. Notice the conflict of dislike and the need of labor. The love and needlessness of play. The wrong and self-interest of falsehood of both word and deed. The desire of personally avenging an insult, an injury to person, family, friend, or property, which have led to wars of nations, and the moral and physical crime of so doing. The desire to gratify the sexual instinct, whose legitimacy is for the continuance of the species under the strict law of love and marriage, and otherwise its great individual and social wrong.

The universal individual love of life and its well-being is defeated by its universal ill-feeling and final death and extinction. This is inconsistent with the allegation of a divine *fatherly* creation of life and its endowment with intense love and satisfaction in it, and its equal capacity for, and certainty of contrary inflictions, from unwillingness or inability to make good the promise intrinsic in the nature of living beings. The antagonisms belie the allegation of a divine *fatherly* creator of life. And to write, it is all to the glory of the creator; the glory is found to be, when interpreted by actual fact, to put promises into the nature of individual life, and break them in the experience of that life. And to aver that it has come about against the knowledge and will of the creator, or that an "enemy hath done this" is to declare the creator to be neither omniscient nor omnipotent.

To illustrate how difficult it is to reconcile the antagonisms of life with the Christian dogmatic assertions concerning a creation and a fatherly creator, I quote a passage from "The Philosophy of the Christian Religion" by Principal Fairbairn, page 94, "Philosophy has no harder or more obstinate questions than those connected with the origin and the existence of evil. Indeed there

is no problem that has so perplexed our finest spirits, reducing some to silent despair, rousing some to eloquent doubt, and forcing not a few into unbelief; while a multitude no man can number, have saved faith by forcing their reason to sit dumb and blind before the mystery it could not penetrate or unravel. One of the most beautiful and pious spirits it has ever been my privilege to know, was a man who had been trained to the office of a preacher, who had distinguished himself as a scholar and as a thinker, and who had become the hope of his college, his professors, and his church. One day it fell to him to proclaim in public what he had tried to learn in the study and in the classroom; but as he stood and faced the upturned eyes of men, there came such a vision of the evils that filled life and the impotence of the will that seemed to rule the world, as well as of the preacher and of the word he preached either to mend or end them, that he vowed unto the God in whose goodness he still believed, that were he only allowed to escape with his reason from the appalling place, he would not again lift up his voice in a pulpit until he had a message better fitted for the supreme crises of a soul sojourning amid scenes so confused and perplexing. The message never came to him.''

Discussion 75. Here follow some of the chief points and conclusions involved in these discussions: The necessary primal assumption of eternal uncaused, therefore forever abiding, quantitative existence, with the inevitable presuppositions of the objective and subjective verities and validities of space and time; then the consequential negative corollary of the creation of quantitative existence. By quantitative or substantive existence, I mean a deposit in space of some real thing of which mass and motions are essential attributes as modes of existing. These modes of existing, as where and when, partake of the intrinsic orders of space and time, rendering of necessity all things and all changes orderly, and can no more be dis-

orderly or really chaotic, than the orders of space and time. Then all things are intelligible. Existing suggests activity as well as passivity. Hence, substance, or the deposit in space and time relations exists. Space and time are, or are passive being. Mass and motions carry with them locally, more or less of quantity, and velocity. This introduces forms with their definite internal positional and velocital constructions. To forms, so and so constructed, and definitely related to an environment so and so constituted which physical and chemical and many other classificatory differences serve to distinguish and to identify all properties, qualities and functional becomings, or phenomena, known as inanimate, animate and psychic, belong, inhere or from which emerge. The complete and adequate reason and power, the how and the why, the all-sufficiency, are of necessity, lodged in the nature and modes of existing of the eternal uncaused quantitative existence.

The most popular name for eternal existence is matter. Partially defined it is that which is in space and takes the three dimensions of space, and cannot be destroyed nor more produced, and preserves its identity under all changes of form, property and function. "One and the same quantity of matter remains invariable in nature, without addition or diminution." *Bacon.* It has states of aggregation called solid, liquid and gaseous, corpuscular, atomic and molecular. Matter is objective to, and is considered by, thought. It is something externally discovered by intuitive sense, and is the name of the thing discovered, and is independent of its discovery and of sense. Neither matter nor its shadow is found by introspection. Nor thought nor feeling is matter. But all that these words denote, connote, purport and import, come of matter in constructed positions and motions, and a cosmic environment. By cosmos is meant the universe, eternally, self-existing and of necessity orderly in all its changes as a deposit in space and time orders, and gov-

erned by the force of its own interrelations, and not by extrinsic teleological causation. Cosmic appreciation we will say, and not cosmic emotion. By deposit is indicated merely that matter is in space and time relations, and therefore they constitute one eternal inseparable interrelated system, and not that it was deposited there by a creative and placing act. Philosophic metaphysical materialism, if you please, that interprets psychic phenomena and all other, as properties and functions of material interrelations. An all-embracing cause must hold within itself universal consequences, no matter what, or how remote, or how many intermediary agencies it passes through, no modifications can be received that were not derived from the all embracing cause.

In some definitely constituted localities where there are special physical and some very exact chemical incorporations of a few of the seventy or eighty atomic elements of matter and nowhere else, and in no other combinations of matter, the matter becomes animate, with as much consequential certainty as of some other physical and chemical incorporations, the matter becomes aqueous. And so throughout the ranges of physics and chemistry, how matter is topically arranged or constructed with regard to the parts of itself and their motions, with the environment, determine what shall result whether a mountain or a man. And this is the all-commanding and victorious feature of materialism. It accounts for mind to the full extent and on the same principle that it accounts for water. And when intelligence shall solve the problem of *how* and *why* two atomic elements in the form and with the properties of gas, chemically combined in exact quantities and numbers, should become water with new properties and functions, the properties of the gaseous state of matter lost, annihilated, except that which identifies all kinds of matter as one matter, *viz*: weight or gravitative force, which ought to have convinced men long ago, that the different atoms were different con-

structions of one matter,—it is likely that intelligence will be able to say *how* and *why* the same two atomic elements in a certain constructed union suffiiced to give the water-form, properties and functions, to matter, together with some other atomic elements in a more complex constructed union, should become a living, thinking, feeling, personality, as property and function of matter.

Matter is the synthetical embodiment, the analytical undermost, "that in which, out of which and about which," issues all our guesses and wonders, and all the exact and verifiable sciences, except the mathematics, whose uncaused principles inhere in or are the verities of space and time, showing one eternal and universal system of things. Here is the sum total of all particulars, one universe or nature, beyond which or within which no existence can be discerned or thought-picture posited with the knowledge that it is beyond or within but other than any possible content of the universe.

The causative antecedents of life have been pointed out. One chemical construction of the same kinds of atomic elements suffices for the manifestation of all kinds of life. The essence of life is *awareness.* It is a new evolved factor from the dead state of matter, as water is a new factor from the gaseous state of matter; which water-state could not have been until the dispersive heat motion of matter had so abated as to allow the gravitative affinity to bring the atomic elements within the reach of chemical affinity. Awareness is a nature. It takes an attitude towards and against, an aptitude to become more and different than it is. It is a self, a will. It receives and rejects. It may become enlarged and differentiated to selfhood,—conscious of consciousness. Perhaps this is denominative of true personality. And what is it all but nature cognizing itself through its own instrumentalities and guidance.

Sir Oliver Lodge holds that "Life is something outside the scheme of mechanics, outside the categories of

matter and energy." This antagonizes all we know about life, and leaves life as an asserted *x*, in which intelligence, a function of life, can find no relation to *a*, *b*, and *c*, things known. For surely, if our knowledge stands for anything real and objective, it cannot ignore matter and energy, for thinking and feeling exhaust and so are the working and change of matter, as truly as muscular exercise; nor the scheme of mechanics, and know that life is without it, for life as we know and feel it, cannot get out of the realm of chemistry, and chemistry is nature's scheme of mechanics. What Sir Oliver wants is a guidance of the operations of nature to make them productive of definite results. And he wants to find it outside and other than nature, and not in it and of it. He thinks mind as an entity is that something that is competent to do the universal guidance, but argues from examples of it *in* the "scheme of mechanics," and *within* the "categories of matter and energy." If life, our life, extends in its terrestrial consequences beyond normal earthly recognition, does it follow that it is outside the categories of matter and energy? Or if it extends beyond these ranges and our life here and now is wholly within those ranges, for he says frankly that we know nothing of life except as a function of terrestrial matter, how can our data and our logic carry us beyond and assure or give us any real clue to infer such extension? Language has a wonderful capacity to suggest by opposing and qualifying word-expressions much more than it can assure us that it is the objective name of. And here is a vast source of the subjective which has been erected into objective reality. Life has the aspect of coming and going, he says. True. So did the air come into the lungs of the just now born infant, and goes out to come in no more in the last expiration of the dying. But it was not life nor a living spiritual entity, as it was for ages supposed to be, and helped greatly to initiate and forward theism. This spirit or soul coming into and going out of the body, corroborated by

their dreams of seeing the dead alive, convinced our childish ancestors that death is not what it seems to be, and introduced the notion of immortality. (I wish it might be true to the betterment of mortality.)

Speaking from the view point of all we know or have data for legitimate inference concerning life, notwithstanding its bare mention suggests, impossible! arising from the almost universal teaching to the contrary for millenniums, life in its human grades, is localized, living, conscious, feeling, thinking, willing and in some respects and to some degree, spontaneously moving matter, as property and function of its mechanical interrelations and cosmic bearings upon it. Life is evidently, though analogically inferred, enhanced by the absence of the knowledge of any other source, the effect of a combination of atomic elements of matter, not one or all of which separated from one specific union gives any evidence of being alive. And this is harmonious with all chemical unions, that they have properties and serve functions that do not appertain to their constituents. And this is the force of the analogical inference. But life in its human grades is a cause of supreme commanding import to all living things. But it is limited to the domain of matter in itself and its effects. The most that life is, i. e., living, willing matter can do in the way of guidance or control of events, is to move the body it animates as instrument to shape or so to juxtapose or interrelate matter that the forces of nature may work the changes foreseen or learn what will follow. For with all human bungling attempts to find or devise a theistic accounting for universal being and change, the rebound of failure sends us back upon one eternally constant object in its innumerable forms, forces, and functions forever ongoing in its own intrinsic power and guidance, where we must find life and all it stands for, not as primary cause but produced and controlled effect. I cannot now think of any instance, in which thought, feeling or will has effected or

can effect any objective or subjective results as guidance or control except through matter. There must be an appreciable something touching something, if there be any guidance or control effected, and the means are material. The voice, gesticulation, facial expression, attitude, writing, a mark, signs of all kinds, electricity, and all modes of communication, placing of things in such and such interrelations, all have to do with matter. Not even spirits and their communications with mortals which Sir Oliver accepts as objectively true, but have a material medium. For if they are, they are somewhere, in the "Summerland" or place whether named or unnamed, if they influence the living here they do it through some material symbol or sign into which intelligence is put as it is put into language. Pity, love, hate, no emotion can affect any percipient except through some sign of it expressed by the agent. Telepathy defined as "The direct communication of one mind with another otherwise than in ordinary and recognized ways; the supposed action of one mind on another at a distance." Prof. Hyslop says: "The scientific world generally has not accepted it with any assurance as yet; there is no knowledge of its laws and conditions. Suppose it has been proved to be a fact; the conditions under which it has any claim to scientific recognition represent the agent as thinking of a fact transmitted at the time that the percipient obtains it." By what means, it may be asked? The Professor says: It may be by some process of vibration set up in the ether between mind and mind. It may be by ethereal vibration set going by a thinker and perceived and interpreted by a spirit, and then communicated by a similar process through the ether to another living mind." There is here some abiding material or ethereal medium involved that mind may touch and influence mind, and this is all we contend for. The scientific inference is that if anything is transferred from place to place it must be through some medium that connects the places. Hence the transmission of

light and heat motions from the sun to the earth, and throughout the solar and universal sun-systems, needs a medium to be set in vibratory motions, and this has been assumed and called the Luminiferous Ether. And Electrical and Magnetic phenomena are best explained as some state of stress or action in the ether. And mathematical calculation has determined some of the properties and functions of the ether, if it exists and fulfills such a mission. And there is no reason so far as I know, that it may not be matter in some possible mode of its being and action. At all events it presents no indication of its being created.

That human personality may be continued after its seeming extinction in death, in fulfillment of the almost universal desire for it, and there are some natural phenomenal indications of it, is by means rendered impossible and hopeless in the scheme of the eternity of matter, and that nature is all embracing, all producing, and all conserving, in its uncreated being and unbestowed powers and functions. But rather the ground of hope is rendered more reasonably secure on the necessary averment of eternal uncreated existence, and that existence within our sense and intellectual purview and determines our nature to be that which is, has always been, and must forever continue, if individual life is within the scope of nature to indefinitely or forever prolong as it has commenced it. And Herbert Spencer has given us a note on this subject. He says: "Perfect correspondence would be perfect life. Were there no changes in the environment but such as the organism had adapted changes to meet, and were it never to fail in the efficiency with which it met them, there would be eternal life and eternal knowledge." On the scheme of necessary eternal matter, with all possibilities and certainties involved in it to be evolved from it and by it, rests our reasonable hope of an indefinite continuance of life, rather than on a fictitious theistic scheme of hu-

man imagination and construction, and on nothing that is fundamentally known, but on what has been guessed, and thought-constructed, without the knowledge or necessary averment of an underlying objective reality corresponding to the thought-construction. Nature has within itself the all sufficiency to evolve the property of life from the non-living, and has accomplished it, as analogical reasoning from the whole field of chemistry declares. And this is a philosophical necessity also as being involved in the averment of universal Evolution, notwithstanding the alleged final settlement of the question and the averred motto: "All life from life," from the failure of life appearing as the result of some attempts to produce it from dead matter. It is most evident that life was not first evoked in the ways of the human methods hitherto essayed to evolve it. And this is all that the unsuccessful attempts of Bastian, Tyndall, Pasteur and others, determine. Nature has prolonged the individual life in the vegetal kingdom perhaps 1,000 years, and the individual human life 100 years and more, and human longevity is increasing by successful human methods both to avoid and to render nugatory what kills. And all that would be needful to prolong individual life indefinitely or forever, would be such an adjustment of personalized living matter and the environment, that should not be killed by the environment, nor by any failure of the living matter, the matter existing eternally, and the only question is to continue its property of life. By life is meant all it stands for in its conscious development. What lies within the store-house of eternal, universal self-ongoing, and self-evolving nature, is not known to any knower.

All that I have posited in a necessarily assumed eternal, uncreated existence, called nature or the universe, of which all our knowledge concerns, must be posited and much more, even the creation of the universe, as the alternative, in a gratuitously assumed creator, of whom we know nothing whatever. For eternal uncreated

existence is the primal and necessary affirmation. And not creation or creator of existence.

And having existence as first and necessary postulate, there can be no need to assume the creation or creator of existence. Neither can either be proven. Nor can the allegation of either be any explanation of any existence or phenomena observed in nature. For something partially recognized cannot be better known by presenting a reason for it entirely unknown. And he who offers the word God as an explanation of anything, has said for the explanation, I do not know. To take the scientific pathway, all life is wholly the evolved property and function of matter.

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